On Being a Person Through Time:

The Value of Life Extension and the Ethics of Aging Intervention

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Introduction

In context of the possibility of aging interventions leading to significant or radical extensions in human lifespan, this thesis seeks primarily to address the question of the value of life's continuance to persons, as the most fundamental motivating factor behind the project specifically to extend life beyond the classic endogenous maximum span. In so doing, its chief focus will therefore be upon the nature of persons themselves, especially in terms of the structure of personhood as a category of being. Much of the investigation will therefore be of an ontological nature, with the nature of value itself, and the relation of value both to persons in particular, and living organisms and the natural realm in general, being a critical theme. The consideration of the latter cases is necessitated by the requirement to analyse the structure of persons in whole, and especially because the primary positive thesis is that persons are processes which are motivated at base by a conative driver which itself is constitutive of their being at all. The analysis of the nature and function of this primary driver of persons as processes, in context of its relation to their secondary instrumental valuation of themselves, which lies at the core of the thesis will generate the conclusion that life's continuance constitutes an inalienable value to persons that is profound to the degree that it obtains irrespective even of their own evaluative judgements. This analysis suggests a grounding in the question of the manner in which persons arise from the category of other living organisms in general, and the manner in which these arise from the background matter in the universe. The latter will be analysed and the nature of the conative driver will be asserted to be a physical principle which is a defining condition of living organisms in general.

Additionally, the analysis of the category of the natural will constitute a critical theme for other reasons, which involve the reliance by certain commentators in the discourse concerning the ethics of aging intervention and life extension upon assertions as to naturalness, and the ethics of human alteration of or interference with the natural, the sacred, the normal, and the given. These latter will be argued to constitute a cluster

concept, which will be analysed and demonstrated largely to be lacking in soundness, validity and real cohesion. Further, common ethical arguments against the wisdom of radical life extension in the personal case will be analysed, and mostly found wanting. The core thesis represents a re-evaluation of the classic liberal concept of persons as self-conscious, autonomous, rational valuing agents. This classic analysis will be shown to be faulty in certain key respects, and a correction will be proposed along the lines mentioned above. The fact that these faulty aspects of the classic liberal position constitute key points of attack for conservative personhood theorists, and that the correction offered by the revised liberal version generates a picture of the stability of the value of persons to themselves (and therefore generally) that at least matches that of the various conservative positions (considered to be their main strength by their proponents), largely neutralises such critiques, as well as removes a key rationale for those opting for the conservative positions in their rejection of the general subjectivist liberal picture of personhood. The conservative conception of value in general, and the value of life and persons in particular is critiqued and found wanting. Aside from being commonly based upon a false conception of naturalness, in which supernatural entities, substances or beings are considered to operate, a significant aspect of the failure of this conservative picture arises from the false conception of persons as substantial in nature, or as substances. Accordingly, a critique of the concept of substance in universal ontology is conducted in the first section of the thesis, which will attempt to demonstrate the ontological primacy of process over substance.

The broad structure of the thesis is of an hourglass, beginning in Section One with the widest possible considerations of universal and human ontology in context of the question of the primacy of process and substance. Section two will move through analyses of the various paradigm classical positions on the nature of personhood, towards the focal point of the core thesis in Subsections 2.8 through 2.9, that persons are conatively-driven processes for whom the continuation of their being is an inalienable value, expanding therefrom into an analysis of the nature of the driver of persons in context of living systems in general, and in the universe as a unified processual whole. Section Three will then discuss certain practical issues at the level of the person qua

themselves, which have been posited in context of the radical extension of lifespan, for which the core and more general thesis will be seen to have significant consequences. It is important to note that I consider that there are a significant number of other issues to be addressed in the general area of the ethics of life extension, but these are chiefly *interpersonal*, and so outwith the strict focus of this thesis. The core and general thesis will have significant implications for these, however, but dealing with them would require a lengthy treatment, which would take the thesis far beyond its maximum permissible extent. I append to the thesis two papers which are representative of a number of publications that I have written on the specific and general topics of this thesis. The first of these, "The Ethics of Aging Intervention and Life Extension." will be seen to cover in brief some of the issues raised by interpersonal cases, though, having been written in 2005 prior to the full development of the thesis offered in this dissertation, does not constitute an application of the core and general thesis to these questions. However, part of it represents the earliest version of the nascent core thesis in my published work. The second appended paper, "Immortality, Human Nature, the Value of Life, and the Value of Life Extension", published in the journal *Bioethics* in 2006, contains key elements of the core, and some limited aspects of the more general thesis of this dissertation. Further, it contains writing which appears in this dissertation, though it is here in significantly modified, amended and expanded form. The majority of this partially duplicated writing appears in Section Two, between 2.1 and 2.9, as will be evident from a reading of the appended paper.

Some brief further notes are required at this juncture, in order to obviate certain misapprehensions which may arise from my usage of certain terms and concepts, that may appear isomorphic with meanings and concepts I respectively do not intend, and reject. Firstly, in what follows I critique reductionism, or rather and better, certain interpretations of reductionism. To begin with, it should be recognised that the analyses of reducibility I perform do not impinge upon the core thesis of the phenomenal structure of personhood. This is capable of standing alone, and independent of the grounding conceptual structure I seek to provide for it. If these latter elements of the extended thesis are correct, they very powerfully ground the core thesis in what amounts to the

beginnings of a complete universal ontological system. This is of course desirable, but it is conceivable that I may be mistaken about the connections I assert between, for example, the concept of the conatus and the thermodynamics of living systems, without being mistaken of necessity in my core analysis of persons. That said, I of course consider the expanded thesis a correct and robust picture of reality. The reality thus reflected, however, should not be mistaken to be unscientific, or anti-reductionist. I consider the reductionist hypothesis, in terms of the dependence relation of each layer of universal ontology upon the lower ones to be absolutely a correct picture of reality. My argument is rather that we must respect the layeredness of the universe for what it is, and account for the phenomena that obtain at each level, and the principles which govern such phenomena, *chiefly* at their own level and on their own terms. In this way I deny the Democritan picture of, for example, secondary qualities or the character of processes of macroscopic and higher interactions being *entirely* reducible to the most fundamental particles or processes. That they are constituted *of* them is important, to be sure, but my tasting the apple is not that the apple has sweet-sharp-tasting superstrings (or whatever such) far below the Planck scale. If we look at that level (or levels below, should they exist) *alone*, then the apple, as well as myself, and the taste of the apple which is an interaction of these systems at *this* level, disappears. In this way, what I am saying about reductionism is not that things or processes at one level are magically unconnected to the goings-on of levels below, but rather that the universe is not *solely* describable by language appropriate to the most fundamental level (should it exist at all), but rather, entities, systems and processes at each level must be fairly accounted for, *on their own terms*, in a full ontological schema. If we do not accept this, we lose our capacity meaningfully to discuss or refer to the characters of the particular kinds of processes which occur at each level. Trees, stars, persons, planets, and bus engines, for example, are not *merely* groupings of subatomic particles. This sort of "irreducibility" should be seen to be a strictly different concept from that, say, which has been used by covert creationists in their attempt at smuggling in supernatural forces and interventions to evolutionary theory in the guise of "irreducible complexity". I thoroughly reject all such concepts, as espoused by the proponents of "intelligent design". The evolution of the eye (and all other biological structures) by natural selection is a fact, but this does not mean

that there is a principle of "seeing" present or *manifestly* inherent in superstrings, quarks or atoms. This latter sort of concept, applied to the property or phenomenon of life itself, is characteristic of Alfred North Whitehead's process ontology, which I reject on this, as well as other bases.

On a closely related note, in what follows I will be discussing a feature of the universe I call (following its classical as well as modern psychological usage) the "conatus". The concept can apply to human psychology exclusively, as described above and in the core thesis, and in this way the core will survive a demonstration, if such there could be, of its lack of connection to the thermodynamics of living systems as proposed in part (subsection 2.10) of the extended thesis. However, to address the latter, the concept as here and generally used by me, is strictly to be distinguished from any supernatural, vitalist or quasi-vitalist concept of a "life force" or *élan vital*, or *vis viva*, or whatever else it may be and has been called. Rather what I so describe in the extended thesis as being seemingly isomorphic with and likely a corollary of a principle in thermodynamics, depends upon the interaction of strictly physical processes, and may be seen both to depend upon the second law of thermodynamics *obtaining at all times and in all places*, and to be thereby a statistically-describable phenomenon of particular sorts of physical systems. Whatever else it may be, it is a wholly natural and physical aspect of process ontology. Further, being an emergent property or feature of particular physical systems above the macroscopic scale (by which I mean above the level of the atom and specific to living systems in particular) it is *not* some transitive force (it is not a "force" at all, strictly speaking) which has required some prime mover as in finalist teleologies, or original impulse for its initial generation, as was conceived by Bergson. Rather it is an aspect of physical systems which through ordinary physical processes attain a particular state of self-organisation that takes them beyond the "event horizon" of mere thermodynamic stability above equilibrium.

Section One: The Metaphysics of Nature and the Normal in the Ethics of Aging

1.1 Nature and humanity

There exists an abiding prejudice within popular apprehension that there is a defensible distinction between humans, or some mysterious aspect of their psychology or agency, and the realm described as the "natural". Rarely more formally argued for or defended at a metaphysical level, this commitment is manifest in the work of many commentators in the area of life extension ethics, and enhancement ethics in general, chiefly as a means to ground arguments against enhancement or other interventions in biological processes.[1]

However, as others have also argued,[2] this distinction is unfounded, and should be discarded. There is nothing whatever that may be successfully defended as constituting a boundary between humans, human psychology and any product of human agency, and the realm of the natural. Any physically constituted substance or process that falls within the scope of the laws and Substance (total sum of physical processes) of the physical universe, as all must do, is natural by definition. So a human, a computer, a tree, an Airbus A320, a memory, a tulip, biological aging, fiction, a storm composed of sulphuric acid, psychological qualia, human science, bioluminescence, granola, uranium, a nebula, a mass extinction event, disease, strychnine, and a transgenic animal (including

[1] **e.g.:** Callahan D. 2000. "Death and the research imperative." *N Engl J Med* 342:654-656; Callahan D. 1987. Setting Limits: Medical Goals in an Aging Society. Simon & Schuster, New York, NY; Fukuyama F. 2002. Our Posthuman Future: Consequences of the Biotechnology Revolution. Farrar, Straus and Giroux, New York, NY; McCue JD. "The naturalness of dying." *JAMA* Vol. 273, No. 13;Kass LR. 2001. "L'chaim and its limits: why not immortality?" *First Things* 113:17-25; Kass LR. 2002. Life, Liberty and the Defense of Dignity: The Challenge for Bioethics. Encounter Books, USA.; Kass LR. 2003. "Prefaratory Note to Council Members." From the report of the President's Council on Bioethics: Beyond Therapy: Biotechnology and the Pursuit of Human Improvement. Available at: http://www.bioethics.gov/background/kasspaper.html [Accessed Jan. 2008]

[2] e.g. Mill JS. 1998 (f.p. 1874). "On Nature." In: Three Essays on Religion: Nature, the Utility of Religion, Theism. Prometheus Books New York, NY; Millar A. 1998 "Following Nature." *Philos Q.* Vol. 38 Issue 151:165-185

transgenic or otherwise biologically modified persons), are all *equally* natural. Whether an attempt is made to define such things in terms of substances,[3] or else processes, the outcome is the same. So the "human" and any product of human agency that can exist in the physical universe, therefore the "artificial",[4] are proper subsets of the "natural". As a result, any and all arguments that reference a distinction between humans together with the realm or any product of human agency, and the "natural" are founded upon a false distinction.

It might be objected, at this point, that there are certain features of specifically human psychology, such as qualia, self-conscious subjectivity and intentionality, which are apparent exceptions to this general position. The objection might run that these features of psychology are fundamentally subjective in nature, and that subjectivity in turn is irreducible to the objective.[5] Such a critique, however, makes certain assumptions that I do not accept. Firstly, it assumes that it is necessary to the definition of the 'natural' that all that is natural is reducible by this definition to strictly objectively accessible facts in the world. This in turn assumes a definition of the natural that accepts both a hard reductionist ontological hypothesis,[6] *and a constructionist interpretation of the same*. It further ignores the possibility of an emergentist[7] concept of the natural, in which truly novel features, which are *either* ontologically *or* epistemologically emergent and (at least descriptively) discontinuous *in some way* from properties, laws and features of smaller-

[3] I consider that these are all composed at fundament of physical energy simpliciter, which is in the macro-scale instantiated in the atomic by-products of stellar fusion. More broadly, I agree with the spirit, if not all of the detail, of Spinoza's claim in his Ethics, Part One, that there is but one substance. This idea seems to be being borne out in modern physics, at least in terms of the idea of every substance being better described as a substance-process of energetic wave form, capable of being unified both mathematically and, at least at the broadest level, and not necessarily in a thoroughgoing constructivist-reductionism, descriptively. See section on reductionism below.

[4] There may be, of course, a defensible though entirely subsidiary distinction between the "artificial" and the "wild", but this need not detain us, as it involves quite separate concepts which are not raised by any in this area of discourse.

[5] As is argued to be the case for qualia in Jackson's classic epiphenomenal "knowledge" argument: Jackson F. 1982. "Epiphenomenal Qualia." *Philos Q.* 32: 127-136.

[6] As typified by Ernst Nagel: Nagel E. 1961. The Structure of Science: Problems in the Logic of Scientific Explanation. Harcourt, Brace & Word. New York, NY

[7] I remain rather agnostic about emergence, favouring neither weak (epistemological) nor strong (ontological) emergence in particular, but if forced to choose likely would accept the former. See Section 2.10.8 for a discussion and further references in this thesis. For a "hard" emergentist view see: Laughlin RB. 2005. A Different Universe: reinventing physics from the bottom down. Basic Books, New York, NY

scale, less complex, lower energy levels of nature, emerge as one moves up through these levels. I will discuss the subtleties of this view of the natural realm further below, but for now suffice to say that I consider that nature is capable of nonlinear, or symmetry-breaking novelties, which despite their radical novelty hold some complete dependency relation to their underlying substrates, such that they depend *in whole* upon, but may not necessarily be wholly explained[8] by appeal to the more or most fundamental levels, or perhaps more importantly *described* in the selfsame terms as would suffice for those lower levels, *without loss*. In this way, subjectivity may be considered to be an epistemologically, and perhaps even (though not necessarily for the purposes of this thesis, or this monistic concept of nature) an ontologically emergent property of the universe, such that it is indeed both formally contiguous, but also, in other terms, formally discontinuous with objectivity in the natural realm. In any case, psychological qualia form a part of the causal economy of the universe (even in the epiphenomenal case, though in that case as a pure effect), and as such are wholly natural. Any attempt to classify these as unnatural, or non-natural must fail, since it will not be able adequately or at all to explain why this discontinuity between levels of what is manifestly contained in or are phenomena of the universe, provides the *thoroughgoing* discontinuity such that the label "unnatural" is warranted. A discontinuity of property or of higher level processes ("substances" as will shortly be argued, are themselves processual in nature) is not a discontinuity of ultimate *Substance, being the sum of Universal Nature*. One might note that there are discontinuities between the properties of helium and uranium, and of carbon and living cells, but that they are, in turn, composed of the same ultimate processes, - energy merely manifest in different arrangements of subatomic particles, protons, electrons and neutrons etc whose sum total of underlying and emergent supervenient process is the ultimate "Substance" of Nature. This does not mean that I accept a Democritan picture of "all is atoms and the void" (or some more modern fundamental equivalent, such as "all is strings") since that is the very soul of the hard reductionist picture I consider is insufficiently rich, or is oversimplistic. I will discuss this enrichment

[8] Either because they cannot be, or else because no finite being can, in the course of a finite universal history, or at least that part of it which affords sufficient energy gradients to afford calculation, calculate or model the necessarily relationships accurately, or else weaker still, because we presently cannot. I would tend to consider the middle position most likely. See section 2.10.8 below on emergence and reductionism.

of the reductionist concept with that of emergence further below, in Section Two, especially 2.10.8. But there is a lot of work to do beforehand, in order to fill out the ontological background of the thesis towards which I am driving. Meanwhile, to borrow from the language of Spinoza, subjectivity may cash out as something like an attribute of the ultimate Substance, which depends upon modes of that Substance of certain levels of complexity and form, as a pre-condition, and is not an attribute appertaining to all modes of Substance. In this way, there can be radically different, or novel properties of Substance, in different cases or modes, but yet there remain one ultimate Substance. For Spinoza this was "God or Nature" and for me, it is "Nature". In order for the term unnatural properly to apply, there must be at least two ultimate substances, and since this must require them to be utterly separate, one cannot be in another in any means or at all, and therefore provided that we are speaking of what "is", we are speaking of the singular "Natural" of which we human persons are irrevocably a part.

Returning to the general or common misconception, such is the depth and near ubiquity of acceptance of the commitment to the idea of what must amount to a fundamental discontinuity in Substance, such that "Nature" forms only a subset of it, that it may well be the case that any reader at this point may be considering the above claim to be very bold, and in need of justification. Before moving on to sketch any such justification, it should be noticed that, properly considered, the burden of proof must rest rather on any claim to the contrary, than on the claim that humans are wholly naturally constituted.[9] To date, no non-natural properties, objects, or events have been adequately described metaphysically or demonstrated in an unambiguous fashion to exist. That there remain some phenomena that are not yet wholly understood in terms of their relationships with established features of the natural universe is no grounds whatever to describe them as non-natural. Indeed, in all but the human or *personal* case, the simple general assumption is that all yet to be explained phenomena are natural, as was lightning prior to the nineteenth century, despite up to that date lacking an adequate natural explanation. Any other presumption, such as that all yet to be explained phenomena are to be considered supernatural, or non-natural until rendered natural by, say, scientific elucidation, appears

[9] The same may be said of any claim of "supernatural" properties, entities, or the like.

self-evidently wrongheaded, if not by anything else, then by induction from a posteriori, or synthetic observations and past cases, and Occam's Razor, but the primary case I put forward, and on which I rely, is *a priori*. In view of this, in our context of the self-evidently, and definitively otherwise wholly natural universe, from which we have sprung, and within which we are, live, and act, the default position must be that we are, ourselves, entirely natural and naturally constituted.

Nevertheless, there is a considerable body of philosophical discourse that treats the situation rather differently, and accepts, in one form or another, the proposition that humans, either in whole or in part, are non- un- or super-natural beings. This discourse ranges from the simply religious to arguments of the likes of G.E. Moore.[10] It is neither the focus nor the intention of this dissertation *fully* to defend a thoroughgoing naturalism, but the elucidation of this position is necessary both to clear away much of the overgrowth of argumentation in the relevant area, as well as to make clear the conceptual grounding of the wider metaphysical commitments and argumentation of this work, which is indeed thoroughly naturalistic. While this particular grounding may not in fact be necessary for all of these same, it is nonetheless important for orientation of the particular cast of these positions, in the author's conceptual framework.

The naturalism I defend is both a methodological and a metaphysical one.[11] I hold that not only is it impracticable for empirical methods to detect, much less verify, or explore purported supernatural phenomena, but that if this is true, such phenomena as are manifest in any way whatever cannot be said to be unnatural or supernatural, or else non-natural. While it is not only possible, but certain, that there are phenomena (such as consciousness and qualia) that are as yet not fully or adequately understood in naturalistic empirical terms, such phenomena cannot be *in principle* inexplicable in such terms.

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[10] In the case of non-natural moral properties, should these exist (which I deny in any case) I would state that the faculty proposed by the moral intuitionists must itself be a natural faculty, and provided that there is a causal relationship between the effects of its detection, and their causes, which there must be, then what is being detected must also be natural, by definition.

[11] The tradition to which this view belongs is venerable, and includes such thinkers as Democritus, Epicurus, Spinoza, Hobbes, Hume, D'Holbach and their modern successors such as Dennett and (perhaps) Dawkins. I do not necessarily endorse the views of any one of these, but the list is by way of a guide or conceptual pedigree.

Provided such phenomena have some or any effect upon, are in any way affected by, or hold any systematic relation to other established aspects of the physical, natural realm, which is empirically accessible, then they themselves form a part of it, by definition.[12]

I will try not belabour the point overmuch, but some further elucidation is in order, to complete the concept. Firstly, it appears clear beyond argument that the physical bodies, including electrochemistry and neurophysiology of humans are entirely naturally constituted. The atoms which compose biomolecules are, after all, ancient parts of the natural, physical universe, and as such are wholly naturally constituted. Our local sun is only capable of the fusion generation of helium, so all other elements which compose our physical structures (and most of the hydrogen and helium which also does), must have originated in the fusion reactions of some ancient red supergiant star. Further, according to the first law of thermodynamics, the energy from which all atoms, or substances whatever are formed is indestructible, and is not created ex nihilo, within the energy economy of universe. In one sense, the definition of the natural is co-extensive with that energy (and so causal) economy. So then, no part of our physical selves is or has been, or could be separate from the natural.

As regards our brute structures, this leaves, as has been indicated, only the psychological elements of human persons. Some further discussion is warranted. Only a thoroughgoing dualism could possibly contend that the psychological aspects of a person were in any case not composed of wholly natural substances or rather better, of physical processes.

[12] This is not to say that this naturalism collapses into a simple definition of ontology. It is possible, within this metaphysical naturalism, that something is, which is not natural, but if so, this thing, power, process or being could not manifest in the natural realm, for if it did, it would be connected to, and thus form part of, that realm. So for that thing, existence would not mean "being in the universe" or "being in nature" but rather "being which is excluded from nature and the natural universe". At present I am agnostic as to whether ideas of things external to nature are in any way possible, though I lean towards the Spinozist side of this, in that I think it unlikely for ideas within the natural realm to be capable of representing that which both exists, and is outside Nature. To this extent, my conception of Nature is close to Spinoza's conception of nature as being ultimate substance, that which all is "in" and which is "in" itself. However I remain agnostic as to whether more than one substance is ultimately possible, given that substantial realms beyond the one substance would be outside the conceptual schemas afforded by *this* substance of nature, and so may have a kind of being which defies the accusation of absurdity levelled at it by Spinoza. In this way, I accept Spinoza Ethics 1p15 but deny 1p13 and 1p14, on various grounds, including the nature and definition of "absolute" infinity not necessarily excluding multiple "infinite" substances, particularly as the concept of "infinity" is itself within and an attribute of the substance within which we are.

But even in such a case, provided that psychological substances or processes are manifest within, have effect upon, are affected by, or have a common substantial[13] root with natural substances and processes, by the above principles, they must themselves be accounted to be natural[14], but would perhaps represent a conception of natural substances in which a ("neutral monistic") parallelism obtains, as appears to be the case in Spinoza.

To be clear- such a commitment to the pervasiveness of the natural as I defend does *not of necessity* rule out the possibility, say, of a purely psychological afterlife, beyond death. While I presently hold that this is extremely unlikely, and indeed assert that psychological processes are emergent phenomena of certain kinds of complex, self-organising physical processes (so, insofar as I understand it, denying Spinoza's apparent parallelism) it remains true that so long as mental processes are not *fully* described in the natural sciences in such a manner that renders them *of necessity* causally bound (or as in Spinoza *necessarily* parallel) to *particular* physical substance-processes, then it remains *possible* that they may continue, or be separable from these physical substrates, perhaps in a manner similar to that by which radio broadcasts are separable from individual radio transceivers. I do not wish to defend such an extreme position, but it serves to illustrate that there may be as yet unknown principles in physics which allow for such a surprising outcome. If such exist, then nonetheless the realm of the mental in which the psychological process would continue beyond the biological death of the brain which had been associated with it, would be *wholly natural.* The purpose of describing this last possibility is solely to illustrate the extent to which the definition of the natural I am describing is pervasive. Simply put, even in such an extreme situation, provided that causation or some systematic relationship clearly ties one such set of phenomena to another, definitively natural one, or at least provided that such relationships are mathematically describable and conceptually quantifiable, then they comprise a wholly natural system. In this way I do not necessarily deny *any* conception of, say a "soul". I only deny that such as there may be, if manifest in any way whatever in the natural realm

[13] In the Spinozistic account of Substance.
[14] Spinoza and other parallelists, or an epiphenomenalist picture would deny that these have effect upon or are affected by (in the former case, and the latter solely in the latter case respectively), the physical mode or realm, but in either case would still assert the entirely natural attribution of these same.

(say by consciousness, or elements of the subconscious), can be describable as non-natural or supernatural.

Further, while I do not wish to enter into prolonged discussion in this thesis on the subject of free-will and determinism, I hold that whether free will is an illusion, or is compatible with determinism[15], or whether it may be in fact be correctly picked out by the commonsense notion, as being in some sense self-originating, monopolar and *sui generis*, even in this latter extreme case there exist no compelling grounds to suppose that it is non-natural, or supernatural. Rather since even a truly "free" will forms part of the causal and energetic economy of the natural universe, it is inescapably natural, albeit in a boundary or monopolar fashion[16], unusual, or remarkable in nature, perhaps as a manifestation of an ontologically or epistemologically emergent property. If some story were to be attempted of the "supernatural" causal history of such a will, stretching back "outside nature", such talk would be absurd, since the whole concept depends upon "free" will being effective (even to the extent of its only being empirically detectable-which is an effect) in some manner in the causal energy economy of the natural universe. So any such conjectural "supernatural" causal history would itself simply be natural and the "freedom" would collapse into determinism again. Simple unusualness, remarkableness or novelty is not of itself sufficient to classify something as non-natural, any more than any of the peculiarities of apparent causal discontinuity in quantum physics[17] render quantum phenomena supernatural, or unnatural. That a quantum event may itself appear or be causally underdetermined, or indeterminate, at least in classical terms, does not mean that it is outwith the scope of the natural.

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[15] In the latter case, arguably, autonomy still obtains. Spinoza attempts a defence of a kind of autonomy within a wholly deterministic schema.

[16] Magnetic monopoles are considered a theoretic possibility in physics (see e.g. Dume B. 2003. "Have physicists seen magnetic monopoles?" http://physicsworld.com/cws/article/news/18338 [Accessed January 2008]). It is conceivable, perhaps, that there are causal monopoles, and that these might manifest as supervenient epiphenomena, as may be posited as an explanation for or descriptive analogue of psychological qualia.

[17] Such as the arbitrary values obtained by the collapse of the wave-function (if this is what indeed occurs, as described in the "collapse" hypotheses), or else the causal discontinuities between multiple fissioning worlds, or the else "spooky" action at a distance of EPR-Bell's theorem quantum entanglement, etc. See note 308.

So then whether or not mental phenomena are wholly identical with or emergently supervenient upon classical physical phenomena of the order of atoms and molecules, or whether they instead represent hitherto undescribed hyperdimensional[18] wave-form processes or energy relations which are not so supervenient, they are nonetheless wholly a part of the natural universe, and cannot be separated from it on the grounds of mere unusualness. What other grounds, after all, can there be, than those of causation and/or systematic interrelation, to describe the natural?

In the discourse of life extension ethics, and enhancement in general, the prejudice of the separability of the human from the natural attains to what would appear to be its own *reductio ad absurdam* in that claims are made[19] that humans ought not to interfere in their *own* biologically constituted "natures", *on the very basis that these are natural*. But this entails that something in human nature allows us to act unnaturally. No explanation is given, or, as I assert, is defensible, for the entrance of this mysterious "unnaturalness" into what *a fortiori* must be a *fully* naturally constituted being. Both the being, together with *any* interference in *anything* by that being must be accounted as wholly natural.

[18] Current "string-theory" posits a remarkable number of dimensions above the classical 4. cf. Greene B. 2000. The Elegant Universe: Superstrings, Hidden Dimensions, and the Quest for the Ultimate Theory. Vintage Books. Chap. 8.
[19] See esp. Callahan, Fukuyama Op. Cit. note 1.

1.2 Nature and the normal

The confusion described in 1.1, though likely originating in false or else irrelevant conceptions of supernatural "separateness"[20] found in religious doctrine,[21] arises in modern discourse especially frequently in matters relating to the biological realm, largely as an illegitimate conflation between the "natural" physical realm, and that which is "given" or "status quo" or "normal". The normal and natural are conflated, I believe, precisely because there are no grounds to defend the strict, or any, natural/unnatural distinction in the universe, and the two half-baked concepts are deemed, somehow, to lend weight to one another. So there are various senses of "natural", in which natural is taken as that which is normal, or else, absent human agent interference would "otherwise unfold". Of course, no account is given regarding these senses of "natural" of why human interference in events is not *always both* natural *and, in its own terms* normal. For what else is there, for humans, other than human agency?[22] In context of the wider subject matter of this dissertation, examples of this conflation can be found scattered throughout the literature, and are variously used to defend (and in some cases attack) a picture of the "naturalness" of the aging process or the ordinary form, trajectory and duration of human lifespan, and of human "nature" itself[23], as well as the "unnaturalness" and therefore illegitimacy of *intervention* in aging[24] in particular, and endogenous human biology in general. In this way, such conflated notions are touted as arguments against enhancement technologies in general. However, none of these arguments in any intelligible way

[20] Irrelevant insofar, both as no account of them has yet been adequately given, and as *ex hypothesi*, anything which counts as fully supernatural will have no effect whatsoever within the natural, physical universe, and will in turn not be affected by it.
[21] E.g. the notion of "nature" being fit for mankind's "use", who in turn is composed most importantly of a body and associated supernatural soul, and other similar dualisms that categorically separate humans from the purely physical natural world.
[22] As Mill notes on this point, if "unnatural" is equated to "immoral", then humans are by this definition incapable of moral action Op Cit note 2.
[23] See next subsection.
[24] e.g. Callahan D. 1987. Op. Cit. note 1; Kass LR. 2003. "Ageless Bodies, Happy Souls: Biotechnology and the Pursuit of Perfection." *New Atlantis*. Spring (1): 9-28; Caplan A. 2004. "An Unnatural Process: Why It Is Not Inherently Wrong to Seek a Cure for Aging." In The Fountain of Youth: Cultural, Scientific, and Ethical Perspectives on a Biomedical Goal. Post SG. & Binstock RH. eds. Oxford University Press.

reference true "naturalness", as can be seen from the above observations, rather, they solely reference "normality", the status quo, or "givenness"[25] in various guises.

[25] e.g. Sandel M. 2002. *What's Wrong with Enhancement*. President's Council on Bioethics(PCBE). Available at: http://www.bioethics.gov/background/sandelpaper.html [Accessed January 2008]

1.3 Nature, normality and normativity

The motivation for the conflation of the "natural" and the "normal" in the above-referenced arguments derives from an impulse to utilise these concepts in a normative fashion, in what is usually a commission of the "appeal to nature" fallacy. At base, this fallacy just is that it is assumed that nature *simpliciter* (and/or "normality") is in some sense morally prime, and therefore "good", and so may be used to ground arguments about actions or things being "bad" in some moral sense, simply on the basis that they depart from the "natural", (or else, the "normal").

This is a fallacy on at least three separate levels. The first is that, as argued in 1.1, everything in the physical universe is natural, and so such an argument is completely redundant and tautologous with respect to any possible thing or relation within that natural realm. This observation is comprehensive in itself, and so removes the need for the second, more generally recognised definition of the fallacy, which is that if there could in some way be grounds for appeal to some natural/unnatural distinction there are no defensible grounds in any case to establish the "natural" (or the "normal") as being morally prime *solely on the basis that it is "natural"*(likewise for the "normal"). To give an example, death by cancer, or botanical poison, or the impulse to kill a sexual competitor is not "good", in a moral sense, simply because (to suspend the, I assert, clear global fallacy of the first order for a moment) it is argued on the ordinary intuition to be "natural", just as it is wrong to define cannibalism as "good", even in context, *simply* because it is "normal" or habitual in cannibal societies. The third level involves the observation that if "naturalness" were morally prime, such that human agency were to disturb it by definition, then all human agency must be accounted immoral[26]. It might be objected that if some "normality" might be accounted morally prime, then we might participate in normality, without disturbing it- but then, *which* normality? In both cases the outcome is absurd.

[26] As pointed out by Mill and Millar Op. Cit. note 2.

As indicated in 1.2, the conflation occurs because the usual reason for such an appeal is to defend a status quo, or normal state of affairs, attempting to add some supposed normative force to the "given" from the purported moral primacy of "nature".[27] This may be seen by the fact that the "natural" in such arguments is *always* seen to be referencing some *particular* arrangement of natural substances, processes or relations, to defend against a possible movement towards another, *equally natural* form or set, on the false basis that this form would somehow be, to borrow from Orwell, "less equally" natural than the former. In this way, the conflation of the natural and the normal, together with the groundless appeal to the moral primacy of "nature" or the "given" in general is *at best* nothing other than a case of otherwise conventional purely conservative or else prudential argument being dressed in borrowed robes to lend it an air of gravitas it clearly lacks, since otherwise such a move would not be necessary in the first place.

[27] Usually whether or not what is being claimed as "natural" is in fact causally downstream of human intervention, adding yet more confusion to the bankrupt notion.

1.4 Naturalistic ethics and the origin of value motivation

The cluster of simple fallacies above are of course to be strictly distinguished from such more sophisticated arguments as Hume's "is/ought problem" or "Hume's Law"[28] and Moore's "naturalistic fallacy"[29]. Both developments are separately interesting, if only to separate them from the foregoing, and each other, and at the same time allow a short diversion which will be useful in orienting the reader towards the location of the positive thesis of this dissertation in the metaethical landscape.

Taking the is/ought problem to begin with, Hume points out the incommensurability of statements about what "is" with statements about what "ought" to be. Hume's Law[30] works within a naturalistic frame, and, in the arguably prevalent interpretation,[31] seeks to replace the conventional view of moral properties with what was in its time a fairly revolutionary sort of projectivist schema, wherein morals are painted upon the world by our psychology, in particular by our sentiments. In this wise, Hume may be thought of as the progenitor of the ethical projectivists, whose most prominent modern theoretical expression is the quasi-realist Simon Blackburn's entirely naturalistic schema.[32] This is compatible with an acceptance of the force of the above described simple fallacy, since just because ethics arises within an entirely natural realm, does not *of necessity* mean that certain ethical evaluations are necessarily matched to certain generalised states of affairs in the world. Ethics may arise wholly naturally within a naturally subjective mind, and be projected from the subject on the world, without it being abandoned that such a mind may

[28] Hume D. 1990 (f.p.1740) A Treatise of Human Nature. Selby-Bigge LA., Nidditch PH. (eds.), Oxford University Press. Book III, Part I, Sect. I.
[29] Moore GE. 1993 (f.p. 1903) Naturalistic Ethics. In: *Principia Ethica*, Revised Edition. Cambridge University Press. pp. 89-110.
[30] As it has come to be known in the work of R.M. Hare and other contemporary philosophers. Cf. Cohon R. 2004. "Hume's Moral Philosophy." Stanford Encyclopedia of Philosophy. http://plato.stanford.edu/entries/hume-moral/ [Accessed January 2008]
[31] Cohon R. 2004 ibid.
[32] Blackburn S. 1985. Spreading the Word. Oxford University Press; Blackburn S. 2000. Ruling Passions Clarendon Press: Oxford.

not determine ethics by observation of facts or states of affairs beyond the bounds of subjectivity.

Moore's "fallacy"[33] attempts to demonstrate an arguably more subtle error, though one that is logically closely related to Hume's distinction. However, Moore's argument seeks to defend a moral non-naturalist position. Essentially, it is held that whatever assertion is made concerning the moral value of a state of affairs in the world, it is always logically open to question whether the stated value is, in fact, the true, or correct one. Moore holds that this "open question argument"[34] demonstrates that moral values cannot be reduced to states of affairs in the natural world, *and so must be "non-natural" properties*. In this way, Moore's argument serves as a motivator towards a different conclusion. The structure of the observation is roughly similar, but the conclusion apparently quite different. While Hume's Fork points towards there being no necessary non-subjective moral "facts", while retaining the plausibility of moral naturalism, given the naturalism of subjectivity itself, Moore accepts the force of the argument against moral value as being a natural non-subjective feature of the world, but instead of abandoning the non-subjective component, opts to consider that values are non-subjective, but are instead non-natural. A full discussion of moral non-naturalism is beyond the scope of this thesis, however suffice to say that, accepting the force of the global supervenience[35] constraint in ethics, and in line with the thrust of the above arguments concerning naturalism, I deny that moral properties are in any defensible sense non-natural, but rather are subjectively person-predicated phenomena whose naturalism is guaranteed by the natural status of the subjective person-predicators themselves. While this is true of the kinds of things we normally take to be *moral* values, the very occurrence of subjectivity will later in this dissertation be seen to coincide with what is, in essence a non-subjective, indeed likely wholly objective value, which itself builds subjectivity in the natural world.

[33] Its status as a formal fallacy is often disputed, and was possibly abandoned by Moore himself.
[34] Moore GE. 1903. Op. Cit. note 29
[35] See e.g. Blackburn S. 1993 (f.p.1988). "Supervenience Revisited." In: Essays in Quasi-Realism. Oxford University Press. pp. 130-148

Further, I accept Mackie's arguments relating to motivational internalism,[36] (being that moral values, if they existed at all, would have to be phenomena which are themselves *intrinsically* motivating, and in this way would be "queer", or unlike any other phenomena known) though I would deny their ultimate force as a complete error theory of ethics. To this extent I will seek later in this dissertation to defend a position of ethical naturalism, which largely accepts a projective non-cognitivist or rather quasi-realist position, but is not a classic position in this school of ethics (and may depart from it significantly enough to cause its proponents to disagree with its association), in that it is asserted that at least one motivation is foundational and constitutive to the very possibility of subjective persons, may very well map onto a principle or law in the physics of non-linear dynamical dissipative systems, and so may perhaps be accounted a value which has some claim to true objectivity, *qua* persons.

In this way I deny that motivational internalism has the full error theoretical consequences which Mackie might suppose. As will be further developed in section three below, I argue, moreover, that motivational internalism points strongly *towards* a quite ordinary, and not "queer" feature of our psychology, which is foundational to possibility of persons, as well as being foundational to valuing activity at all. This feature is the conative aspect of our psychology. Indeed, I will argue that a proper understanding of the constitutive role of the conative in the formation of desires of whatever order, and thus valuing activity itself, itself *explains* motivational internalism. Further, I will assert that the constitutive conative aspect of personhood underwrites a foundational value to persons: the value of personal extension in time, or the value of life extension.

[36] Mackie, J.L. 1990 (f.p.1977). Ethics: Inventing Right and Wrong. Penguin, New York, NY. pp. 38-42

1.5 Nature, aging, and disease: the health unto death.

There is a great deal of debate in modern scientific and bioethical literature about whether or not aging may be said to constitute disease, per se, and so fall within the scope of medicine, and thereby *become* a legitimate target for intervention or therapy. While it is possible, and indeed sensible to sidestep this debate altogether, as some have suggested[37] (since enhancements do not need to regard disease, and classical medicine does not command a sole universal moral monopoly upon a person's intervention in their own predicates), the commitments are considered weighty, and so need attention. There are two main foci of this discourse. The first is whether there are significant functional and physical differences defensible between "age related diseases" and "aging" to warrant the ascription of a categorical difference, which discourse centres around the definitions of aging, and of disease.[38] The second is whether there is such a thing as a "natural" body state, from which disease may be said to be a departure, thus requiring, perhaps, a classification of aging itself as somehow unnatural, prior to being stated to be a legitimate target for intervention.[39]

A full discussion of these topics is beyond the scope of this dissertation, but some points do need to be made here, however briefly. The first, of course, is that I argue for rejection of any talk of "unnaturalness" with regard to health and disease in general, since whatever else may be said of the definitions of these terms, they both fall squarely within the realm of the "natural". Talk of the "unnaturalness" of disease is a clear example of the conflation of the "natural" and the "normal", and the conflation occurs for explicitly similar reasons as are described in the above sections. One such in particular is that the definition of disease itself is not by any means a strictly empirical exercise. It is rather an artefact of sociological and personal evaluative judgement. Health is "good" and therefore to be promoted actively. Diseases are "bad" and are therefore to be resisted, and

[37] Murphy TF. 1986. "A cure for aging?" *The Journal of Medicine and Philosophy* 11(3):237-255.
[38] See e.g. Walker RF. 2002. "Is aging a disease? A review of the Serono Symposia Workshop held under the auspices of The 3rd World Congress on the Aging Male." *The Aging Male* 2002;5:147-169
[39] See e.g. Callahan, Kass, Caplan Op. Cit. note 24

if possible eradicated. But of course "health", being the present freedom from the ascription of all *possible* definitions of disease, is not to be found in the wild, at all, and arguably not to be found in any person, either, except within the context of the *particular* definitions of "health" that are current within the society in which an individual happens to live. It should be remembered, for example, that it is widely accepted that *all* persons carry a significant number of alleles for *presently* defined recessive disease phenotypes.[40] The line between expression of so-called recessive and dominant disorders is frequently contextually dependent and sometimes blurred.[41] What is to prevent some future society from declaring the *carriers* "diseased", alongside the expressers? The same may well be said of latent viruses, for the majority of us are carriers of the chicken pox virus, which frequently manifests in later life as shingles, and nearly all of us have some herpes (cold sore) or papillomavirus (wart) load, which in turn may well predicate neurophysiological disorders and cancers and in later life.[42] No medical intervention has yet been capable of effectively or wholly eradicating these. Are we all diseased? That depends, of course, on one's favoured definition.

The picture of a "healthy" individual, then, is clearly itself a moving target, with further requirements continually added: not just freedom from parasites, infective agents and obvious gross malfunctions, but now optimal physical "tone", proper nutrition, and even freedom from genetic factors which may not be *presently* manifest, and which are a part of the predicates of an organism, at its endogenous "base". Such a picture of health, for example, could not have been relied upon in the 1940s, let alone the 1840s or before, to define a person as "healthy", but is now quite standard. A person may feel and look perfectly healthy, and assert that they are so, but on intense technologically assisted scrutiny may be found to be carrying certain mutated alleles that will inevitably, if

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[40] Lohmueller KE. et al. 2008. "Proportionally more deleterious genetic variation in European than in African populations." *Nature* **451**, 994-997; Pulst S-M. 2003. "Neurogenetics: single gene disorders"[Review]. *Journal of Neurology Neurosurgery and Psychiatry* 74:1608-1614

[41] For example in the case of heterozygous sickle cell anaemia, wherein even given heterozygosity of this generally recessive trait, cells may sickle under certain exogenous conditions such as hypoxia. and a case study in.: Bock H. et al. 2003. *"Sudden death due to a haemoglobin variant." International Journal of Legal Medicine*. Volume 118, Number 2; for more general discussion see also: Pulst S-M. 2003 Ibid.

[42] Bosch F, Manos M, Nunoz N, et al. "Prevalence of human papillomavirus in cervical cancer: a worldwide perspective." *J Nat Cancer Inst* 1995; 87: 796-802.; Itzhaki RF et al. 1997. *Herpes simplex virus type 1 in brain and risk of Alzheimer's disease. Lancet* 349(9047):241-4.

nothing else intervenes, result in their degeneration and death. Likewise, such tests may draw a blank, but in the eyes of future medicine falsely so, since they may miss what will by a later technology be known as a "disease". In the cases of latent viruses and deleterious alleles, it is easy to see that some future society will consider ourselves as diseased as we might have considered those who, in previous ages, felt "healthy", despite their carrying numerous parasites. "Age related diseases" are continually emerging in our understanding, and very many would at one time or another simply have been defined as symptoms of "old age". What will one day constitute the full canon of "disease" is therefore open-ended, and it may well transpire that none of us, in the eyes of some future generation, may be accounted to be, on their definition, fully, or even adequately "healthy".

Perhaps the simplest way of expressing the idea of disease is that for a person to *consider* themselves to be diseased, they must feel that they are dis-eased, either at a personal functional, or sociological level. They must feel some impediment either in their own sense of wellbeing, or else in the face of what they would consider to be the optimal state of being "healthy", available to them through their cultural understanding. Gaining knowledge of an anomaly, defect, or latent infective agent or deleterious allele by technological means commonly results in an apparently presently "healthy" person *feeling* diseased, and being accounted to be so by medical authority. That there are matters of fact in the biological processes which are relied upon is, in this sense at least, secondary. To define something as a disease in the first place, we do not first identify a *disease*, and *then* account it *bad*, we first identify a state of affairs, decide that it is bad, and only then do we apply the label of "disease". In this way there is considerable, though obviously not comprehensive, analogy between the evaluation of disease, and the practice of moral evaluation.[43] Arguably each involve some objective and scientifically measurable elements, but in each case, there is a complex interaction between these

[43] In this assertion, I reflect a view similar to the nominalist or normativist view espoused by H Tristram Engelhardt Jr. For a concise definition of this school and of the main alternative, the functionalist school, in context of a critical discussion of the role of nonlinear dynamics in the definition of disease (which itself is interesting for, though somewhat oblique to the broad approach of this thesis, and its more specific interest in living systems as autopoietic self-regulating dissipative structures) see: Holm S. 2002. "Does chaos theory have major implications for philosophy of medicine?" *Medical Humanities* 28:78-81

"facts in the world" and the subjective response to such facts of persons *in context of complex social and cultural environments* which interaction results in the emergence of values appropriate to the particular situation, which have a quasi-objective quality, but are not objective in the classical sense which Mackie critiques, of being in themselves, say, capable of detection by conventional scientific instruments.[44]

Even if this analysis is not accepted, a limiting factor to the delineation of health and disease might reasonably be argued to be death, and indeed I will argue for this here. It seems to me that, whatever else may be said about "health" versus "disease", a set of biological circumstances, whether endogenous or exogenous, that is defined by inexorable and comprehensive physical degeneration ending *inevitably* in death, *must* cross the semantic boundary between these evaluative terms at some point, or else we lose the sense of one, and therefore both. In this way, if biological aging *per se* could possibly be defined as being separate from the "diseases *of* aging", and if this former biological aging is then defined as *simply a state of health*, as opposed to one involving disease, then this would be a case of *the health unto death.* Such a case would appear to render the sense of "health" quite convincingly absurd.[45]

This is particularly so when, as any tour of a nursing home will attest, aging brings with it a host of cruel impediments, indignities, and undoubted dis-ease, for the aged.

[44] It might be argued that morality cannot be *entirely* subjective and person-predicated in a self-conscious sense, but is cooperatively or emergently calibrated, such that, while moral values and "rules" are indeed dependent upon subjective valuing agents of one form or another, the actual shape of any such "rule" or value is not exclusively determined by any one subjective individual. Rather, individual valuers value things in a sub-ethical manner, and it is the collective effect of large numbers of such valuations (as I will argue below given a basic orientation by the Master Value of the conatus towards self-preservation), which causes these ethical values, or rules to emerge. These, in turn, are situationally dependent in a manner that reflects a moral particularism.

[45] With this constraint, at least some aspect of a functionalist or realist view of "health" and "disease" is accepted, though essentially in a minimal fashion, such that any physical process within an organism which by virtue of that process alone ultimately results in death, must be accounted to cross the line to being disease *at some point.* In this way my view could be described as a functionally-qualified or grounded normative view. It does not reference "normal" functioning or any particular set of optimal functions, but it acknowledges that even a nominalist view of the definition of health must reference *some* function, to make sense. It would be absurd, even on a strictly nominalist view, to label a corpse, a "healthy" corpse!

1.6 Lifespan as natural history, aging as cultural artefact

As the eminent biogerontologist Robin Holliday has asserted, "aging is no longer an unsolved problem in biology". [46] While there is still some debate over the relative significances and interplay of its multi-factorial nature, there is no longer considerable doubt over its origins and fundamental predicates. One particular feature of this picture is of interest to us here. This is the consensus that aging serves no natural or biological "purpose" or "function". There is no intelligible teleology of aging. There are no "gerontogenes" and aging cannot be regarded as some indispensable positive function of biology, qua biology and natural history themselves.[47] Aging is rather principally a by-product of the long-term diminished, null, or deleterious effects of alleles and processes whose shorter-term benefits are strongly selected for. The optimal reproductive age of an organism is calibrated by a complex interplay between its endogenous factors and its environment. Evolutionary selective "pressures" act upon the species to optimally calibrate its individuals' development and reproduction within the contexts in which the species happens ancestrally to exist, and which its activities help to shape. Beyond this spontaneously ordered or emergently calibrated age of optimal reproductive efficiency,[48] selective pressures tail off until they fall to zero. Simply put, evolution does not regard what occurs to the progenitors once they have successfully reproduced. There are no selective forces holding them together, and their biological program ceases to have positive functionality. Their systems of repair fail, their positive functions run beyond their limits and can become antagonistic, and they degenerate inexorably until death occurs.[49] [50]

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[46] Holliday R. 2006. "Aging is no longer an unsolved problem in biology." *Ann NY Acad Sci.* May; 1067;1-9

[47] Rattan SI. 1995. "Gerontogenes: real or virtual?" *FASEB J* 9: 284–28; Kirkwood TB. 2002. "Evolution of ageing." *Mech Ageing Dev* 123: 737–745

[48] For a general discussion on the idea of the environmental calibration of phenotypes, referencing the concept of the "Environment of Evolutionary Adaptedness", see: see Hagen EH. 2002. What is the EEA? (detailed answer)*The Evolutionary Psychology FAQ* Hosted at: http://www.anth.ucsb.edu/projects/human/epfaq/eea2.html. [Accessed January 2008]

[49] Kirkwood TBL., Rose MR. "Evolution of Senescence: Late Survival Sacrificed for Reproduction." *Philosophical Transactions of the Royal Society of London* B332 (1991): 15–24.

However, this aging process does not (among animals at any rate) occur in the wild essentially at all. There are no very aged wild animals, since long before they ever get to any great age, as a result of the *beginnings* of their aging-predicated degeneration, they are out-competed, and starve or are killed. In this way, *advanced* aging only manifests in its profound pathologies as an artefact of high culture. If an argument could be made (and I consider it dubious that it really could) from the point of view that, in evolutionary history or in animals today, the early degenerations of aging assist in the interchange of generations, and in this way *aid* the evolutionary adaptive process, by facilitating easier interchange of generations through weakening incumbents, such an argument would simply become inapplicable to human persons, as a result of the very phenomenon which has increased the manifestation of aging itself: cultural adaptation. Aging, then, is an artefact of the very thing which makes the purportedly adaptively beneficial (in this scenario) rate of turnover of generations no longer required in the same way that it once was, in any case. The redundant requirement is that, in our evolutionary history, adaptation to changing environmental circumstances could only occur by mutation and natural selection, which of course meant death for those de-selected, allowing the new, better adapted variants further to flourish and replace the existing population. Cultural adaptation, for human persons, has rendered this wholly endogenous biological adaptation *for the purposes of mere survival,* essentially obsolete.

Further, and as a corollary of this, it is of vital importance to understand that, once a population has achieved a profoundly successful form of strictly *cultural* adaptation, the biological adaptive process is bypasses, selective pressures disappear, and evolution or endogenous biological adaptation, simply *ceases*. This may be termed a variety of *Hardy-Weinberg Equilibrium.*[51] This means that as soon as a species has reached the *minimal* structure to support the advent of such cultural adaptation, once the latter has taken off, that *minimal* structure will remain more or less unchanged. This further means that the

[50] This of course furnishes, if one accepts a functionalist account of the delineation between health and disease, a good grounding of an account of aging processes as diseases.
[51] Also known as the Hardy-Weinberg Law. It implies that in a large and randomly breeding population allele frequencies will remain more or less constant. Most of the destabilising forces such as Natural Selection and Genetic Drift have been more or less reduced to zero in the modern cultured world.

members of that species will *not become further adapted to their own culturally constructed realm.* Now of course this realm itself will tend to adapt *around* the peculiarities and awkward features of the biology of the cultural predicators, and will often attempt to compensate for them, but this compensation will of necessity be incomplete, and will further constitute a significant constraint upon the capacity for the species fully to enter into their culturally adaptive realm, for they will remain tethered to a biology which is largely adapted to an environment which the cultural adaptivity has rendered obsolete, and non-existent. A nice example of this, and its potential for harm, is our tendency to eat fatty, salty foods. We enjoy these excessively because in the Environment of Evolutionary Adaptiveness,[52] salt and fat were rare and vital commodities. In the days of the Supermarket, this is no longer the case, and so we are facing an obesity crisis, since we have not, and indeed *cannot rid ourselves of the once adaptive, now deleterious cravings of our precultural forebears.* These observations will be seen to have significant consequences for the kind of view discussed in subsection 2.6 below, wherein it is held by some that our culturally-predicated identity is somehow *biologically* natural, in a finely tuned and *preordained* manner, such that our biology and culture, as they each have been through the ages with the one changing, the other remaining the same, are in a kind of pre-existing harmony with one another. The latter is simply not the case.

Attempts have been made by both liberal and conservative bioethical commentators to construct value arguments based upon the reverence either or both for "natural" wild history, and "human" cultural history. I have elsewhere argued against the force of this quasi-sanctity, proto-conservative position (most explicitly iterated by Dworkin,[53] though more by Kass and Sandel[54] in the context of aging intervention and life extension) and will return to them in greater detail in Section 2 below. I will not rehearse these arguments here, though, other than to say that in absence of any explicit teleology of aging, there is no prima facie case whatever for respecting the calibration of life span, arising from the deep natural history of our distant, precultural ancestors, in absence of

[52] See note 49 above.
[53] Dworkin R. 1993. Life's Dominion: An argument about abortion and euthanasia. HarperCollins, London.
[54] See Kass, Sandel Op Cit. notes 1 and 24 respectively.

the circumstances of its formation, any more than there would be a case to preserve the genotypes of sickle cell anaemia, in culturally-mediated absence of malaria, or in the presence of fully effective exogenous medicinal remedies.

1.7 The Struldbrug obsession: an example of the natural/supernatural confusion at its most explicit in the discourse concerning aging

There is a persistent worry that is regularly cited in publications arguing against radical aging intervention. Among those who support aging interventions this worry has been informally dubbed "the Struldbrug obsession"[55]. Its theme appears in numerous mythic tales, such as those of Tithonus or the Sybil of Cumae, both of whom asked divine beings for, and were granted either true immortality (in the case of Tithonus) or a guaranteed vastly extended period of life (the Sybil) but forgot to ask for eternal youth. So they lived on and aged and withered until out of pity for his plight, Tithonus' lover Eos (goddess of the dawn) turned him into a grasshopper, while the Sybil shrivelled steadily until she was so far gone that she placed in a jar and hung from a tree, no longer to issue prophecy, but answering to each request merely that she wished to die. Of course none could help her. The case most frequently cited at present by critics of aging interventions derives from Jonathan Swift's *Gulliver's Travels*, and relates to a sub-group of a society he encounters (the Luggnaggians), who are called the Struldbrugs. Just like the Sybil and Tithonus (on whose archetypes they were clearly modelled) these Struldbrugs are immortal in that they can never die, but nor are they immune from aging. In his paper critiquing what he terms the "posthumanist" movement which espouses efforts to mitigate aging as an underlying process, Stephen Post makes extensive reference to Swift's allegory:

> But Swift was, of course, mocking the Baconian hubris of embodied life immortal. In fact, the Immortals, lacking the wisdom that comes from accepting aging and death, are "peevish, covetous, morose, vain, talkative," and the like (p. 214). They are altogether superficial and lacking in wisdom or insight. As they age, they become increasingly demented: "The least miserable among them appear to be those who turn to dotage, and entirely lose their memories" (p.215). By age 90, all "forget the common appellation of things, and the names of persons, even of those who are their nearest friends and relations" (p.215). Suffering with what we would now call progressive dementia, they are "despised

[55] As coined by Prof. Roy Walford. See e.g. Coles S. "Life extension for the 21st Century". Available at: http://www.grg.org/resources/walford.html [Accessed January 2008]

> and hated by all sorts of people; when one of them is born, it is reckoned ominous" (p.216). Moreover, "They were the most mortifying sight I even [sic.] beheld, and the women even more horrible than the men. Besides the usual deformities in extreme old age, they acquired an additional ghastliness in proportion to their number of years, which is not to be described."(p.216). The king of the Luggnaggians wished Gulliver to bring a couple of these creatures back to his own country, "to arm our people against the fear of death" (p. 216)[56]

In this passage, Post presumably unwittingly reveals all that is most wrong and frankly ridiculous with the use of such allegories in attempts to undermine the wisdom of any project of aging intervention. The first and most egregious problem for the attempted analogy between this fantasy-allegory and real aging interventions in the real world, is that such allegories rely upon a false dichotomy, which can in fact only exist in the realm of fantasy or mythology, while ignoring the true dichotomies which exist between such mythic tales and situations in the real, physical universe, and between chronological and biological aging. The false dichotomy holds that biological aging can in some sense be separated from the longevity of a biological organism. But this is simply magical thinking and is absurd. Its mythic and fantastic origin and context (used illegitimately in the context of an ostensibly serious attempt to evaluate the merits of scientific aging research!) betrays the true pedigree of such types of thought. A moment's reflection on whether it is in fact possible continuously and indefinitely to *biologically* age and thereby increase in infirmity and decrepitude, *and at the same time* to continue to live more or less forever as a biological organism will reveal that this argument relies upon the notion that biological life and its continuance, *per se*, can be separated definitively from its biological context! And yet the life that these flawed accounts attempt to speak of is clearly and explicitly biological, not spiritual or supernatural in any way. Such stories are, quite simply irrelevant to questions relating to a real world biological phenomenon such as aging, and use of them in such a context wrongly conflates this strict dichotomy while respecting the false one. Such usage may, however, reveal a few things about the reasoning and motivations of the critics of aging intervention.

[56] Post SG. 2004. "Decelerated Aging: Should I Drink from a Fountain of Youth?" In: The Fountain of Youth. Post SG, Binstock RH. (eds.), Oxford University Press. p. 87.

Aside from this, frankly fatal, flaw in reasoning, a reading of the above quoted passage reveals a kind of bogeyman scarecrowing going on in such discourse.[57] The old and geriatric infirm are demonised and ridiculed. Aging, especially at the extreme, is seen as a kind of palliative to death, since it is so horrible it will make us think that death is a boon, rather than sufferance of the ghastly slings and arrows of biological persistence in its face. This kind of reasoning is evident elsewhere in the literature arguing against aging intervention, but it is quite desperately muddled. To begin with, the modern users of these sorts of bogeyman images almost in the same breath attempt to convince us that aging is in fact, both wholesome and "natural" and/or is divinely ordained, and so to be desired[58] in some way. Of course they have to do so, if they are to maintain what is their fundamental line: that aging in the presently existing biological trajectory is a state of being which is somehow morally prime and good, such that we should not seek to intervene in its progress.

This self-contradiction reveals a further critical flaw in such kinds of argument. After all, if one turns ones attention to the actual project of aging intervention, which is these arguments' (to dignify them!) intended target, one is forced immediately to recognise the absurdity of an attempted critique of aging intervention, which uses as its primary motivating (and largely emotional) argument the proposition that the biological symptoms of aging are undesirable! Clearly interventionists would simply agree that they are undesirable, which is a principle motivating factor, after all, for intervention in the first place.

Further, the fairly common idea that the unpleasant symptoms of biological aging are to be regarded as being beneficial for the very fact that they are unpleasant, and so gradually persuade us that death is not so bad after all, is self-evidently absurd.

[57] This ageism is quite apparent in many biomedical approaches to the aged, even in quite ordinary medical practice. See, e.g. Perls TT. Silver MH. 1999. Living to 100: Lessons in living to your maximum potential at any age. Basic Books. New York, NY. pp. 4-9

[58] e.g. Kass 2003 Op. Cit. note 24 ; McCue 1995 and Callahan 2000, Op. Cit. note 1.

I will return to an examination of this theme in greater detail in the final subsections of this thesis.

1.8 What then of the "Natural"?

It may at this point be objected that my definition of the natural is so wide as to be essentially undefined, and therefore empty. If it is argued that simply *everything* is natural, it may be objected that the term is effectively redundant, since it does not pick out any category or subset of the whole of ontology. Should we, then, do away with the term altogether? This is a conclusion which has been argued for, recently particularly by Steven Vogel.[59] I have some sympathies with his positions on this, which essentially are presented as a dichotomy, in which all that is natural is either:

D1: Nature is only that which is not supernatural

In which case it is everything we may ever have access to within the universe, or:

D2: Nature is that set of things with which we have not yet interfered.

Essentially, I accept the former definition, and reject the latter. In accepting the former definition, I assert that there is no intelligible distinction between humans and the natural. As has been stated, humans, human agency, and all its products are wholly natural. This of course entails that I reject the latter, but it will be helpful to clarify the grounds for such a rejection a little further.

The primary reason for rejection of the latter is that I can see no warrant whatever to stipulate that human action is generative of non-nature, or that either the artificial or the more generally anthropogenic is not natural. For this to be the case, human action and therefore humans themselves would, in some sense, have to either originate from, or else somehow in whole or part have entered or stepped into a category which is partially or wholly beyond the scope of the natural. But humans are wholly naturally constituted. Our

[59] Vogel S. 2002. "Environmental philosophy after the end of nature". *Environmental Ethics* 24. pp. 23-39

physical ontology, which according to naturalists and indeed essentially all aside from thoroughgoing dualists, is our *whole* ontology, is explicitly within the natural frame, and even the most vaunted aspects of our psychology, such as our conscious rational capacity and most pointedly our intentionality by which all artefacts are ultimately picked out, would appear to arise wholly from within the causal economy of the natural realm.[60] To postulate otherwise is both to deny, for example, that animals are capable of conscious mental activity (or perhaps worse, to suggest that such animals as do possess this are themselves unnatural!), and also to suggest a startling metaphysical power on the part of human agents: the capacity to shatter the ontological status of the natural itself! For to be able to generate unnatural things, and to harm the category of nature itself, to de-naturalise components of nature, and advance the bounded area of the non-natural, within which nonetheless all remains entirely fundamentally composed of molecules, atoms, subatomic particles, and energy, is to presume a spectacular supernatural power, whose origin is entirely obscure, whose effect undetectable in any conceivable scientific manner (in that it produces no new material, has no mass, possesses no quantifiable energetic quality whatever) at all, and the warrant for whose existence as a concept at all appears to be traceable to nothing so much as a hubristic hope that we are somehow separate from the biological continuum, in a manner more profound than that which separates rabbits from flatworms and bacteria. Effectively, such an assertion would amount to the idea that we are possessed of supernatural powers, and also that we, ourselves, are not natural, and in effect can have no truck with nature, since all our actions, and everything we affect becomes, by this Midas-like supernatural power, unnatural. We would exist as a kind of inexplicable lacuna, an expanding pool of active, intelligent anti-nature. But yet at the same time, of course, it is expected by proponents of the view that we generate unnaturalness, that we accept that all of our actual physical components both arise within the natural realm, and are composed of none other than the same energy in very much the

[60] Physicalism as it is classically known may not be thought to include such positions as, for example epiphenomenalism, but I would contend that if the epiphenomena, such as psychological qualia, have some reality, they will nonetheless turn out not only to depend upon or supervene upon the physical world, but will indeed be shown to be entirely physical. The difficulty which this may *prima facie* present is one with which I deal in later sections more explicitly, when considering reductionism, emergence, and the layeredness of the physical universe. Further, whereas epiphenomena might not be considered to be a part of the causal economy in that they do not cause further effect, they nonetheless may be so considered, but rather as pure effect, sort of causal monopoles. I suspect, however, that this will turn out not to be true.

same forms, at least at the atomic level and below, as has always been the case, and is unequivocally natural in both origin and constitution! If it is thought otherwise we may ask: are, then, our very atoms, forged billions of years ago from indestructible energy[61] in red supergiant stars, unnatural? Do they remain so after we die? What an absurd idea! No warrant for either the origin or the existence of such a godlike power or ontology in the case of human persons can, or will be found, nor is there any warrant to postulate one, beyond the illegitimate one just stated. It seems, in particular, to depend upon the religious notion of creation *without* evolution. For what can supply the sudden radical discontinuity by which the deep ontology of nature itself is *compromised* by a slightly more cognisant primate? If we are indeed derived from a long line of gradually changing, and entirely natural, animals, what supplies the radical discontinuity? It is no good, for the purposes of asserting this particular distinction at any rate, to attempt to separate humans as biological animals from humans as agents, since such a distinction would assert that a wholly "natural" biological organism can *act* "unnaturally". The claims of those who assert that we may not interfere in aging, or in the frame of human biology on the grounds that these are "natural", after all, *rest precisely on the ground that we are indeed naturally constituted*! The inescapable self-contradiction becomes crystal clear when the argument is applied to the manipulation of alteration human genome or other such fundaments of human biology. For to argue that such an intervention was unnatural, it must be held that the genome is itself natural, but what, other than most particularly the genome (to hold *ceteris paribus* the other equally natural biological substrates, such as the phospholipid line of generation, to which the conjecture applies equally in any case) differentiates us from, say, other primates, or any other animal? Only a picture in which we were formed *originally* from a wholly other cloth such as is found in the supernatural tale of the Garden of Eden (where the "image" of God supplies the distinction) could intelligibly ground even the beginnings of such an ontological claim. I of course reject such a claim entirely. Evolution is a correct picture of the biogenesis of species. The Garden of Eden, if extant once, must be extant still, since it contained, according to the Bible, the "tree of life" from which we are guarded and prevented from entry by the

[61] According to the First Law of Thermodynamics.

Cherubim with the flaming swords.[62] If this is not metaphorical, then it is clear that it does not exist, else we either must be able to visit it or at least its gates, or detect it, or consider that it may be locatable in current spacetime, or else we must be expected to believe that the Divine "tree of life" is, in fact, dead, and has been swept away by geology. But if metaphorical, then it cannot provide a guide to the actual course of events in the actual world, as regards our origins and ontology. The simplest answer is that the story is just that- a fable, alongside many other such, and just as I find no warrant to believe in Audumla the great cow who, in the Viking creation myth, licked the first man and first woman from the primordial ice, I find no warrant to accept such an origin myth, and plenty of warrant to consider it untrue.

The second reason I offer for the rejection of D2 is that, if appealed to as a primary definition, it essentially suggests that the very definition of the natural rests solely upon the fact of human interference in a world. In this case, it would appear that in a possible world wherein humans never arose, and never had the possibility (within that world) of arising, there would be no warrant to consider such a world "natural" at all. Human interference as the defining condition of the natural itself, however, appears to throw out much of the sense of term, as better expressed by D1. When we consider, for example, that the meteoritic impact which ended the Cretaceous epoch was definable as a "natural" event, and that the meteorite itself was "natural", we do not mean by this that the meteorite had not yet been interfered with or affected by human artifice. Rather, we simply mean that it was "out there" in "nature", or simply that it was existent within spacetime.

A third reason was given by Mill in his essay "On Nature",[63] which runs essentially that the idea that one may act "against Nature" and that doing so constitutes a moral crime, or creates moral disvalue, is repugnant and also may well be incoherent. It is repugnant because for this to be true, and at the same time for it to be true that human action is what itself generates unnaturalness, means that if nature is held to be morally prime, humans

[62] Genesis 3. This of course may well provide a further reason for canonical conservative opposition to the idea of radical life extension. See discussion of the conservative view in Section Two below.
[63] Mill JS. Op. Cit. note 2.

are essentially incapable of acting for the good. It is incoherent, since it is argued, at least within the liberal tradition of metaethics, that ethics to a large extent, and perhaps entirely, is in fact generated by human reason, and for and within human cultural activity. I would, however, for reasons explained in Section 2 below, not go quite that far. However, the preceding reasons are more than enough to reject in any case.

Returning to Vogel, he asserts that in respect of D1, everything whatever is natural, and therefore the "natural" comprises a useless category, since it picks out nothing short of everything entirely. The definition collapses into more commonly used terms such as "everything", or "universal", and the like. In respect of D2, Vogel asserts that if the "natural" is inaccessible to us except through our own concepts, and our own concepts are considered to be "unnatural" or the predicators of unnaturalness, then the natural is essentially inaccessible to us. In both cases, he argues, the concept of nature is essentially useless to us, and should be abandoned.

These arguments have been interestingly critiqued by Robin Attfield.[64] Attfield specifically critiques Vogel's assessment of the situation with regard to D2, stating that Vogel "proves too much" by his argument, in that, if correct, it would mean for example that it would no longer be comprehensible to consider that we spoke of anything coherent, when speaking, for example, of a deity who had a transitive relation to the Universe. Such talk would essentially be meaningless, since only that which is wholly within human concept has any reality qua ourselves at all. So it is meaningless even to conjecture whether such a deity might possibly exist, and supposing one such did, it would *remain* meaningless to discuss such an entity, or its relation to us. In this way, such an approach denies us significant realms of discourse concerning something which, in his words is "…something we ought to be able to suppose to be at least conceivable…" I agree with Attfield here, and while I still reject the definition for the reasons given above, I am unconvinced by Vogel's approach on D2. Attfield goes on to outline a third important sense of the word nature:

[64] Attfield R. 2006. "Is the concept of "nature" dispensible?" Ludus Vitalis; vol. XIV, num 25; pp. 105-116

> In this third sense, "nature" is used of the nature of an organism or creature (that is, its inherited or evolutionary *make-up*, or more generally what makes anything to be the thing that it is or of the sort to which it belongs). … For each kind of living being, whether cat or cactus, beaver or barnacle, it makes sense to speak of its *nature*, and, as I shall be arguing, it is highly important that this possibility is open to us. … It is now time to present some reasons why the concept of nature in the third sense is indispensable. My first reason is that the *good* and equally the *harm* of a living organism depend on its nature. If we do not know the nature of an organism, we could not tell what constituted its good or its harm. This is not just to say that the concepts of good and harm are species-specific; it is to say (unsurprisingly enough) that grasping the good or harm of a creature involves some grasp of its inherited constitution or make-up. If so, and if ecological ethics is partly concerned with promoting the good of species, and preventing their being harmed, then this discipline must also engage with the concept of a creature's *nature*, whether or not this is understood, in Aristotelian fashion, in terms of the creature's capacities and potentials. Equally, insofar as veterinary ethics is concerned with the good and harm of individual animals, it too must engage with this concept. For this conceptual connection applies to domesticated species as well as to wild ones. Problems certainly arise for genetically modified species, since we are less clear what their nature is; yet their derivation from genetically *un*modified species makes it likely that to a considerable degree they too inherit a nature, just as … cultured kinds inherit much of the nature of their pre-domesticated kin. And by parity with veterinary ethics, it is difficult to persuade oneself or others that medical ethics, insofar as it is concerned with the good and harm of individual human beings, can avoid being concerned with the *nature* of human beings in a corresponding sense.[65]

Let us attempt to formalise such a definition of nature, which we may call the "nature as essence or character" concept:

> D3: Nature is that which is essential to the identity of a thing, qua itself and in respect of its kind, such that by knowing this "nature", it may be said that we know the essential features of a thing and/or its kind, *or else* we become aware of the particular distinguishing character of a being's processes and may identify it as being separate or distinct from other things or beings/processes, or classes of things or beings/processes.

[65] Attfield R. Ibid. pp. 109, 111-112

Essentially, I agree with Prof. Attfield that "nature" in this third sense has a legitimate meaning, and a legitimate place in our lexicon and conceptual landscape. It is indeed an indispensable functional term. Later, in Section Two, I will explore the divergence between the substantialist "essence" account of nature D3 and the processualist "character" account (distinguished above by the "or else"), dismissing the former, and accepting the latter, but this distinction need not concern us at this point. Importantly here, there is nothing in this general definition that argues in any way for the human-exclusivist, and divided definition of "nature", D2. In accepting this definition, we in no way whatever accept that, for example, although humans may have certain characteristics which may perhaps distinguish them from other animals, such as the capacity for complex reason and complex, language-constructed culture, these distinctions in no way of themselves imply that humans are not natural in the sense D2. That humans have such a particular or distinct "nature", rather, surely implies that they participate fully in legitimate talk of naturedness as *subcategories of a universal Nature*. Following Spinoza, we might say that the natures of each mode are individual, and separate each from other modes and from other classes of modes, but that all modes, entire, are formed from, and approximate towards, the total category of Substance.[66] Attfield goes on to attempt some bolstering of D2 from D3:

> But if the third sense of "nature" proves indispensable, the second, that of *the sphere unaffected or relatively unaffected by human action* is likely to be valuable too. How can we even understand the flourishing of wild creatures without the concept of their natural environment? Is not understanding of the flourishing of domesticated creatures partly dependent on grasp of both the behaviours and the natural environment of their undomesticated counterparts? [67]

But it seems clear to me that the bolstering attempt fails. For what, in relation to D3, supplies the necessity of the lack of human intervention or affect? It may well be that some aspects of that specifically human-unaffected sphere may be considered valuable

[66] Garrett D. 2002. "Spinoza's *Conatus* Argument." In Spinoza: Metaphysical Themes. Koistinen O. (ed.) Oxford University Press. pp. 129-134.
[67] Attfield Op. Cit. note 64. p.114

qua some of those wild animals, such that we should refrain from interfering with them, but this does not justify some kind of deep, metaphysical disjunction. It is surely the maintenance of the circumstances that supply the flourishing for certain particular natures that is important, the *alteration* of which is inimical to them, whatever the origin of such alteration. To assert that a non-human alteration of such circumstances is just fine, qua the flourishing of the animal as picked out by its nature, even though it destroys that flourishing, simply because it is a non-human event is patently absurd. To state that this is impossible is likewise absurd. Such an idea would require, for example, the further notion of some kind of ordained state of grace in nature, which supplies each species with the ideal conditions for its "flourishing" at all times, in a manner that *any* alteration of the circumstance would be inimical to such flourishing. But this is a simply false picture of reality. Above 99% of all species, which have existed are extinct, and a very high proportion of those became utterly extinct, rather than simply evolving into other species. From the oxygen holocaust, through the Permian extinction, to the K-T extinction 65 million years ago, through innumerable other "natural" catastrophes which indubitably had nothing whatever to do with human action, trillions of trillions of living organisms have had their flourishing destroyed by changes in circumstance which did not accord with their "nature".[68] Many of these, of course, were not brute forces of the non-living world, but were predicated by the activities of (others of) the creatures themselves. Countless times have species been rendered extinct by over-predation, disease, or out-competition by other living organisms. Once again, there is not now, and never was any "Garden of Eden", and I strongly suspect that the core of support for D2 has historically derived from just such an idea: that there was at some point a set of animals and plants which was the "right" one, ordained by God/Nature, within which all relationships are to be considered sanctified and "good" in some manner, such that disarrangement of them is both functionally and morally wrong. This idea is straightforwardly false, and deserves to be consigned to the dustbin of history. But it is persistent, and has certainly leaked into some features of the environmentalist movement. The concept, for example, of biological nature as constituting a "delicate web" in which each animal and plant "plays a vital role" may have some elements of truth, but also fosters such an image of a static natural ideal,

[68] Elderedge, N. 1991. The Miner's Canary. Prentice Hall, New Jersey.

the disturbance of which is somehow "unnatural", as though it were not perfectly "natural" for the web both to be in a constant state of flux, but also one in which there are often violent turbulences, which annihilate whole swathes of such "players of vital roles". The overall impression one is left with is that the "web", at its fundament, is neither delicate, nor particularly attached to any one species or group of organisms. Nature either biological or non, is not static and brittle, but rather is elastic, robust, and constantly in flux.

Such misguided thinking is evident in certain modern "environmental" campaigns, driven by an impression that all human intervention is necessarily wrong, and must be put "right" somehow, such as the one to re-introduce the beaver to Scotland.[69] It is true that beavers once inhabited Scotland, but it is of course also true that they did not *always* inhabit Scotland prior to human intervention. A mere 12,000 years ago there were no beavers whatever in the territorial boundaries of modern Scotland, as the whole of this area was under kilometres of ice. There were no trees for the beavers to live upon. The beavers migrated into the territory as the ice receded, and trees gradually repopulated the landscape. Presently, there are fewer trees in the Scottish landscape than anywhere else in Europe, and (essentially *forcible*) reintroduction of a species which quite literally "beavers away" at felling them from dawn to dusk most of the year around may therefore not contribute to the health of the *present* ecosystem. There are reasons to think it might, however, and I don't particularly consider that they should not be reintroduced. The point is just that the basis of this should not be that they were some "native" species, part of a set of eternally "native" species which was part of Scottish "nature" (any more than the aurochs, bear, or brachiosaur!), and excludes "invasive" species on that basis, since clearly the beaver is just such a species, as were *all* species at one time, or another in *every* landscape. Are urban foxes[70] *invasive* in a man-made landscape? The question is more or less empty, and the reason for this is that all environments and ecosystems are spontaneously self-organised, and the urban foxes are no more natural, or unnatural than the buildings, or the wild parakeets which have been seen in southern England since the

[69] The Scottish Beavers Network "Campaigning for the reintroduction of the European Beaver into Scotland. Website: http://www.scotsbeavers.org/ [Accessed January 2008]
[70] See: http://www.thefoxwebsite.org/urbanfoxes/index.html [Accessed January 2008]

19th Century, and are presently growing rapidly in numbers.[71] Are they all to be condemned and shot? Then what of all the thousands of introduced plant species which have rather unquestionably enriched (for example) the British landscape? The picture is far more complex than most assume, and many species that are likely to be taken for granted as "native" are actually recent introductions.[72] Or else one might consider the Keiko and Knut incidents. In the former a whale, star of the "Free Willy" film series, having lived in captivity for decades since infancy and which had grown fully accustomed to the sheltered life in a water-park was flown out to the Norwegian Sea by a well-funded public campaign to "free Keiko". The whale was apparently very distressed by this experience, and its repeated attempts to reconnect with people were frustrated by the campaigners:

> Efforts to return Keiko to his native wild habitat in Atlantic waters off Iceland have met with triumphs and setbacks. Loosely supervised, Keiko lives just off the west coast of Norway. Charles Vinick, director of the Keiko reintroduction project in Iceland, [talked] about the ordeals involved in the first attempt to release a whale raised in captivity. Clamor for Keiko's liberation came after the 1993 movie "Free Willy" galvanized children around the country. … Although he swam more than 1,000 miles away from Iceland, Keiko reappeared in Norway a month later and was spotted swimming with children and accepting fish from humans. Iceland and Norway have since passed legislation banning human interaction with Keiko. But Vinick says it may be impossible to completely free the whale. "Keiko is an international celebrity," Vinick said.[73]

It was eventually lured (using food as well as this same clear behaviour of desiring human contact) to an uninhabited Fjord and where, further deprived, it promptly died. The activists then hauled it out of the water and buried it in a field, with ceremony. One of Keiko's "caretakers", present at the ceremony, was quoted as saying that the whale was "free now, and in the wild", when in fact it was dead, and in the *land* of Norway.[74] In the case of Knut, "environmental activists" attempted to force zoo officials to allow an

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[71] See: http://news.bbc.co.uk/1/hi/education/3869815.stm [Accessed January 2008]
[72] Preston CD. et al. 2002. The Changing Flora of the UK. London: DEFRA Available at: http://www.defra.gov.uk/wildlife-countryside/ewd/flora/changing-flora.pdf [Accessed January 2008]

[73] Quoted from Nadin E. Monterey Herald. Available at: http://web.gps.caltech.edu/~enadin/Writing/MCH_FreeWilly.pdf [Accessed January 2008]
[74] 2003 news story "Keiko Buried in Secret Ceremony": http://edition.cnn.com/2003/TECH/science/12/15/keiko.buried.ap/index.html [Accessed January 2008]

orphaned polar bear cub, born in a zoo, to starve to death, or else to kill it by lethal injection, simply because it was born in a zoo, and it would be more "natural" to allow this to happen, since an abandoned cub in the wild would surely die. At the time of writing Knut is alive, apparently in good health and enjoying its food, in the zoo. Would allowing the animal to starve to death or be killed by lethal injection (as happened to a sloth in similar circumstances in Leipzig Zoo the previous year)[75] have better respected its "nature"? These latter cases are rather disgusting examples of the is/ought fallacy. Apart from this, what was going in each of these cases was a total inability (or unwillingness) to comprehend the possibility that what is "natural" to an intelligent animal has significantly to do with what that animal actually experiences, even if what that animal experiences is, in fact, a human-made or "artificial" environment. This inability derives exactly from a misguided acceptance of D2, which has nothing whatever to do with D3. Urban foxes, like urban pigeons, are not living in an "unnatural" habitat. They are living in the natural habitat of the city, where their flourishing depends upon circumstances which are patently "artificial" and man-made. Recently, the once seriously endangered Peregrine falcon has been making strong adaptive inroads into this "new" habitat, and appears to be flourishing in urban centres, which appear very much "fit for purpose".[76] Surely denying that this is quite legitimately the case in accordance with their "natures" is denying that they have the capacity to adapt quite happily to the environment in which they patently do flourish, merely on the basis of its falsely being supposed "not-natural". Such eurytopic species (though the peregrine is perhaps closer to being a stenotope than are its urban prey, which perhaps partly explains its rather slower adaptation to this environment), of course, do do better than extreme stenotopes[77] when it comes to adaptation, by definition. But being a eurytope as opposed to a stenotope does not make a species less "natural". Consider the possibility of human intervention to *preserve* existing ecosystems. One may easily light upon examples, such as the human

[75] See news story about Knut as well as the sloth available at : http://www.spiegel.de/international/zeitgeist/0,1518,472937,00.html [Accessed January 2008]
[76] e.g. see article in the Boston Glove Available at: http://www.boston.com/news/local/articles/2004/06/27/city_birds_learn_to_fly/ [Accessed January 2008]
[77] A eurytopic species is one which which has the capacity rapidly to adapt to changing environmental circumstances- foxes, crows, pigeons, seagulls, squirrels, racoons are classic examples. A stenotopic species is one which lacks this behavioural adaptation capacity- swordbill hummingbirds, panda bears and social insects which depend upon relationships with particular plant species are examples of this category.

suppression, by artificial means, of "invasive" species, which outcompete the "native" species. Of course these latter terms themselves reference the very "essentialist" conception of ecosystems that I have just denied; however, qua the prior inhabitant species, it is clearly the case that new species which out-compete them are inimical to their flourishing given their particular natures. Is such intervention to be considered contrary to the flourishing of those existing populations in those ecosystems, qua their nature? Patently not.

On a somewhat different tack, noting that the word, "nature" is used for all three senses, not just in English, but in many languages, Attfield suggests that such a philological fact, perhaps through an etymology he does not supply, indicates that there are some necessary connections between them.[78] But surely this is an example of the fallacies of equivocation, argumentum ad populum, as well as the genetic fallacy. That earth, wind, water and fire were long considered the four "elements" led to the common expression relating to the weather: "exposure to the elements". The use of the word element in this context, and in the context of the periodic table, shows only a broad strictly historical conceptual connection, and says nothing whatever about the nature of reality. What were referred to as the "elements" now roughly correspond to the phases of matter. That "nature" was and is used to cover, in many languages, the concepts implied by D1-D3 is a trivial truth relating to historical usage, and the nexus of concept with which they all deal. However, it says nothing at all about the *truth* of this alleged connection through all three cases.

For the above reasons, I deny that D3 lends any credible support to D2. What then of D1? Are we to go with Vogel on this, and consider that on such a definition "nature" as a concept is redundant, since it in fact contains all that there is, as there can be no supernatural? I suggest not. In this, I agree with Attfield's insight in that it is at least conceptually necessary that there should be a defining condition of the totality of what there is, in this "natural" universe. One might, indeed, a la Attfield, bolster D1 from D3, by suggesting that, accepting D3 as indispensable, it remains logically open, and indeed

[78] Attfield Op. Cit. note 64 pp. 108-9

compelling, to ask of this universe: "what is its nature?" The fact that the question has logical ground upon which to stand appears to demonstrate that a definition of the natural as the totality of the causal interactions of *this* universe is not a redundant definition. In this way, it is possible to argue from D3 to D1, Once again, one may appeal to Spinozistic definitions for clarification, and state that, when asking of each particular thing: "what is its nature?", one is asking "what is the nature of each mode" of the ultimate Substance, Nature, whose nature is comprised of that of all of its modes and attributes combined. If it is objected that Spinoza himself rejected the possibility that there was more than one "Substance"[79], it should be noted that Spinoza's argument relies on the concept of the Substance's singular "nature", which itself is described as being "[with]in nature" and that Spinoza used the term "Nature" "Substance" and "God" essentially interchangeably. It is clear from this that, as Attfield points out, for these arguments to work in the first place, one must have access to a definitional category of "supernature" or "unnature". However nothing whatever may be inferred from this as to the requirement that such a category itself is content-full, or whether we may ever have knowledge in any way of this, or even whether such concepts as knowledge, and logical structure, have relevance to that which is in this category, should it in fact exist, or obtain in some way. All that is necessary is that we shall have logical freedom to refer to it, and in this way its use is justified, for the totality of that to which we have access, even if that is, indeed, all.

[79] Spinoza Ethics Part I; Propositions 13-16

1.9 Substance versus process in the metaphysics of nature

Since one of the primary theses of this work will turn on the definition of persons as processes, denying any substantial element whatever in the constitution of persons, some notes as to the metaphysics of substance versus process are necessary and germane. The question of substance versus process is one of the very oldest in philosophy. One of the great dichotomies of schools of thought in western philosophy, it has its origins in the teachings of the pre-Socratic philosophers Parmenides, and Heraclitus. These two represented the first champions of these radically opposing positions in the discourse concerning universal ontology. We will examine them in reverse chronological order, Parmenides, whose work was at least in part a response to Heraclitus' first, for the sake of argumentative structure.

Before embarking upon a brief examination of the history of the substance/process dialectic (itself, of course, a process!), it will be useful to sketch the meanings of these terms in philosophy. First, a substance in philosophy is an ontological category which refers to a solid, unchanging, unitary extant- one might be tempted to say a "thing" although "things" may also, as we shall see, be considered to be processual, and not substantial. The most important feature of a substance in this mode is that it should persist through time, in a changeless fashion. It is not that substances may not be the predicators of change, or be the recipients of the same (although in the extremist Parmenidean sense, this is arguably so), but it is argued that while there may be changes that substances inflict, by impact or other influence, and while some of their qualities, such as the "secondary qualities" spoken of by Locke, such as colour and flavour, they are possessed of "primary qualities" that are intrinsic and in some sense absolute, so changeless through time. A change in one of these primary qualities would amount to a change in the substance itself. Since the ontology of substances depends upon the concept of them having a changeless and unitary nature, a change in the primary quality of a substance would represent a change of substance, and therefore the destruction of one,

and perhaps the creation of another such substance. To accept that a substance may change in *all* its qualities, or even in some of its primary qualities, and yet remain reidentifiable as one, *particular* substance, is to accept that substances themselves can undergo process, or change, and indeed is to abandon the concept of substances as such, in favour of reidentifiable *processes*. A process, on the other hand, is a much more fluid concept, literally. Process is an ontological category which refers to a succession of events or changes, which may flow more or less rapidly, and may therefore have periods of greater or lesser stability, but it is one in which the basic nature is change or flux. Where a substance must have some *unchanging* quality or qualities for its ontological category, a process equally *must* have some changing quality or qualities, else it is of course, a substance. In this way the identity of substance depends upon changelessness, and the identity of process depends upon change. Further, a substance must in effect be unitary across time, and in a sense, being changeless, qua itself alone may be considered importantly time-unaffected or even *timeless*.[80] Any fission in a substance represents destruction of the original substance, and creation of two or more "new" substances. The same is not *necessarily* true of processes. It is conceivable that a process may divide into two or more streams, and yet reunite into one, as a river may do. Also the identity of a process is significantly more pliable and possibly agent-relative than is the identity of a substance. The "effects" of global warming, for example, may be seen in the shrinking of icebergs, but yet the shrinking of icebergs is clearly *a part of* the process of global warming itself. The dying process of a polar bear due to hunger may be seen to be a discrete process, or it may be viewed *as a part of* a wider process.[81]

Parmenides considered that the world was essentially substantial. There was only substance, and no process whatever, for process requires change, and change, for Parmenides, appears to mandate that "new" properties or things come into being, which

[80] The concept of substance usually allows for strictly relative changes, so, changes in position, which are obviously not in any way "timeless". It is not an empty question whether changes in position of a purported substance, change the substance itself, and therefore make it a process. But we will not examine these here.
[81] This quantitative promiscuity of identity is certainly something of a difficulty for process views, and one which has been fixed upon by modern philosophers such as Strawson and Van Inwagen both to critique categories of substance, and process, as shall be discussed further below. The special category of the identity of persons defined as processes shall be a significant theme in Section Three below.

he accounted to be impossible. For Parmenides all process was simply an illusion, a mistaken perception of process- a misinterpretation of universal ontology. Taken at its most radical, this doctrine can be stated as proposing that there is only one thing, and that this thing, this ultimate substance, does not change. This conclusion follows from the idea that in order to eradicate the concept of process altogether, one also must eradicate change, for all change is essentially processual in nature. The stipulation that there was only one thing, one ultimate substance appears less obvious, but may follow from a concern that the acceptance that there are many single substances, which are not solitary and may themselves both interact, or be aggregates, or cluster to form other aggregates, allows for, and to some extent anticipates process. For to hold that there are many unchanging things, whose arrangement shifts, allows process. But to state that there are many unchanging things, whose arrangement is utterly static, appears to add the concept of "many" in an unwarranted fashion, for if they are utterly static, what warrants the ascription of "many" as opposed to "one", since part of the definition of a substance appears to be that it does not admit of internal change. Even a division, in a sense, is change, since it involves *conceptual* movement across aspects of universal ontology. A single, unchanging matrix of "things" may thus be accounted to be one singular thing. Such a conclusion offers ontological, descriptive and explanatory economy, so satisfying a pre-Occam Occam's razor, and appears the best strategy in any case for eradicating the ontology of change or flux, and therefore process. To the modern mind, and to a "commonsense" view of the world, so often vaunted in philosophy, such a conclusion might seem self-evidently absurd. But it is not without some modern succour. After all, the deeper physics inquires into the ontology of "that which is", the more it appears that, after all, the ultimate substrate of the universe, the final universal "stuff" of which all is composed, may indeed be unitary and unified- "strings" in string theory, composing a unified "brane" or "branes", or else simply "energy". Further, there are some approaches to the recognition of the time-symmetry of physics equations[82], and the problem of the ontology of time, which "bite the bullet" and state that time is either wholly illusory, or else is entirely an aspect of, and subsumed within, spatial ontology in a wholly

[82] With the putative counterexamples, radiation/absorption, and entropy, or the second law of thermodynamics, being explicable in terms of simply the shape of the block universe itself, or else, as with Huw Price's conception, being agent-relative illusions. For reference, see subsequent note.

deterministic universe. The outcome of such conclusions is traditionally called a "block universe", wherein the past, present, and future are all wholly extant, and the "passage of time" is simply an illusion. One modern exponent of a view like this is the Australian philosopher Huw Price[83], who holds that the illusion is an artefact of the kind of being which constitutes what we call "agents". Such a universe is not merely deterministic, but utterly and eternally, or atemporally determined, and I would argue has some claim to the credential of vindicating the extreme Parmenidean view, though this may perhaps not be recognised by its main exponents.

I am personally sceptical of such an extreme position, and, as we shall see, of the whole Parmenidean conception, because it seems hopelessly "ad hoc" and stipulative to simply throw inexplicable, awkward, or disdained phenomena into the box of "illusion". Further, such an ascription simply begs the question: if time, along with all flux and change at all are simply "illusions", then what, we may ask, *motivates the illusion itself*? The attempt to get around the problem here simply shifts it, and opens it again at another juncture. Far easier, simpler, and indeed more intuitive and commonsensical, simply to accept that there are indeed changes, and flux of a kind, and seek to explain or account for them on their own terms.

Philosophers in the wake of Parmenides, such as Democritus, attempted to respond to Parmenides' problematic challenge that change mandated that something comes from nothing. Abandoning the "hard" substantialist position which seeks to deny any flux whatever, but hoping to maintain the ontological primacy and fundamentality of substance over process, while allowing conceptual space for the latter, Democritus devised the concept of atomism, wherein processes were real, but were ontologically wholly dependent, to the extent that they were quasi-illusory, being only interactions of substances. In this model, there were only atoms, or utterly changeless, indivisible, basic ontological units, which were eternal, with a range of features such as "sharpness" or "roughness" etc., whose interactions in an absolute void was all that there was of process.

[83] Price H. 2001. Time's Arrow and Archimedes Point: New Directions for the Physics of Time. Oxford University Press.

The atomistic view gained some initial succour from the investigations of modern science, there having been discovered the basic particles of elements, and what appeared for a time to be basic particles overall, these putative fundamental particles being deliberately named after the Democritan concept. But this connection was itself shattered by the discovery of the compound nature of these atomic structures, and then more egregiously so by the advent of quantum mechanics, with its recognition that the Rutherfordian model of electrons and protons being akin to "hard" or thing-like, substantial planetary systems was simply an incorrect picture of reality. The atoms turned out to be more akin to wave-systems, and the description their subatomic states abandoned thoroughgoing talk even of causal determinacy. The wave-function as described by the Schrodinger equation, while determinate overall, has the curious feature of "collapsing" (on measurement) in an indeterminate fashion, by which it appears that as the wave-particles of the subatomic world attain their most substance-like form, achieving a measurable and measured fixed and determinate value of one sort or another, they appear to do so at the cost of sacrificing causal determinacy in the process of this "collapse", and thus appear to be very un-substance-like in their overall state- since in their most deterministic (unmeasured or non-collapsed) phase (as described by the S-equation) they appear not possessed of constant characteristics, being neither one static "thing" nor another, but all possible states of a "thing" at once. Such capricious behaviour, exhibiting a heterogeneous and unpredictable (except by broad statistical means) nature, is far more comfortably described as process, than as substance. Even these particles appear to be process-manifestations of a still more basic process-subject-and-enabler, most often referred to simply as "energy".[84] In this way the most basic ontology of the universe looks rather more akin to one of process, than it does of substance. Taking our cue from such observations, we might perhaps invert Parmenides' claim that it is impossible that something comes from change, or that things *become*, or are in a state of becoming at all, and postulate that, without the flux of becoming, there is and can be no-thing.

[84] Since by Einstein's relativity, they can and do change from "matter" states to energy, and back again. But importantly, the "energy" can re-crystallise into *differing forms* of matter.

Which brings us nicely to the views of Heraclitus of Ephesus. Most simply put, these were expressed in his famous formula that "Panta Rhei"- "everything flows" or "nothing stands still". For Heraclitus, the primary -indeed very nearly the sole- ontology of the universe was one of process, change, flux. This led him to assert that the universe was ultimately composed of a single ultimate or paradigm process, which he termed "fire", of which all other processes are manifestations or variations. Once again, such a radical concept appears to offend both commonsense and prima facie intuition, as well as pre-philosophic empirical evidence.

Let us begin with the concept of "fire" and work upwards. Firstly, Heraclitus did not mean it literally. It was intended, almost certainly, as a metaphor for flux itself, fire in reality being a paradigm process, simply a manifestation of obvious process within a world of less obvious ones. Despite this, the idea of an underlying, or unifying basic universal process is also implicit in Heraclitus' use of the term. Some of the implications of quantum mechanical and the very much less well-evidenced (perhaps irrevocably unempirical) "string" theory appear to bear out this view of the most fundamental layer of the universe being one of a boiling, quasi-indeterministic flux of wavelike interactions.[85] There remains, however, a bias in physics towards a substantialist viewpoint, as is apparent with the frequent nomenclature of the Standard Model of "subatomic" physics, being "particle" physics, with a focus upon finding the "most fundamental particle" or set thereof. But matter-antimatter particle reactions at the subatomic level, wherein "elementary" particles are destroyed and converted to gamma rays, as well as the frequent transformations between these supposed "fundamental" particles, which come into being, decay, and often have *extremely* short lifespans (e.g. the Tau lepton has a lifespan of 0.3 picoseconds)[86] suggest that such a search may be missing the point. The search for the Higgs' boson will likely result in the discovery of further, smaller "particles" at lower levels, etc. and even these will be many orders of magnitude above the deeply mysterious, unimaginably small and energetic Planck scale.[87] Further, while I do not myself subscribe to this view, and many do not, those most inclined to a

[85] Greene B. Op. Cit. note 18.
[86] Quigg C. Feb 2008. *The Coming Revolutions in Particle Physics.* Scientific American. pp. 38-45
[87] Quigg C. ibid.

substantialist particle physics are often those most accepting of the idea that we are approaching knowledge of a total set of basic physical laws. Prominent among these laws is perhaps the most universal law in physics, that of the conservation of energy: energy may neither be created, nor destroyed. Instead, energy simply passes from one state or phase to another. Some of these states or phases are instantiated in what we call "particles" or "atoms" and the like, what I will call *apparent* substances. These are not "true" substances, since they fail to be either changeless, or truly fundamental, and exhibit internal flux. A formal defence of these latter claims would require a doctoral-level dissertation in physics, and is obviously beyond the scope of the present focus of this thesis, but suffice at this point to notice that *there is no law of conservation of particles or substances at any level*. Lavoisier's 1785 law of conservation of matter was later abandoned in physics, precisely because Einstein's relativity shows that matter and energy are interchangeable. Particular forms of matter are not themselves eternal, and may be converted into energy, and back again. This interchange is one of *process*. While some may hope to find an ultimate particle that is truly fundamental, changeless, and indivisible, this remains merely a hope, and one which crucially must be accounted to be founded on nothing other than a philosophical prejudice. The law of conservation of *energy*, meanwhile, is pervasive and established by every observation at every level of the universe known. I consider this sufficient to establish, at least in principle, the primacy and fundamentality of energy over *particular* substantial form, with the exception, arguably, of the form of the totality of universal energy itself, which, by the first law of thermodynamics, a corollary of the law of conservation of energy, can neither be created nor destroyed, added to or subtracted from, and encompasses all possible forms generated by the flux of aspects of this universal Substance. We may in this way attempt to ground the Spinozist claim of singular Substance (being the total sum of indestructible universal energy) and universal modal flux (of that energy), governed by principles conceivable as "adequate ideas" or in physics terms "laws", as well as grounding the Heraclitan claim of flux and logos, with flux being represented as an ever-changing fire, corresponding to what in modern terms is conceived as energy, whose changes obey (or perhaps even constitute) certain changeless principles. There is, in this way, a certain tension in process ontology, between the changeless and the changeful. But

this need not amount to a contradiction, for what is change, unless measured against some other thing which is changing *less*, or is *changeless*, and what promotes or drives change, other than tension and instability of opposing principles or forces? And laws or forces are not "substances" in any accepted conception of that term, but rather are derived from, and can *only be described in terms of* the changes whose behaviour they mandate. In this way, the Standard Model of physics is actually, perhaps surprisingly, more Heraclitan than it is Parmenidean, merely appearing Parmenidean because of conventions of language, arising from a heritage of philosophical bias towards substance-concepts.

I will not enter into or attempt a complex analysis of Heraclitan metaphysics, even if such were possible (very little of his actual writing remains), other than to say that he considered that all was created by the dialectical process of opposing forces, with each apparent thing or body or situation necessarily giving way to others, from the *agon* or strife of opposites (presumably not diametric, balanced opposites, however, else there would be no process!). Further, he answered the logical criticism that his system was self-defeating, since if all was change even the *principle that all was change would itself change*, by postulating a unitary predicator of all change, which appears to have been either or both the principles of change themselves, or else the totality of the universe. Certainly he stated that the universe itself was permanent, and unitary:

> "*This universe, which is the same for all, has not been made by any god or man, but it always has been, is, and will be an ever-living fire, kindling itself by regular measures and going out by regular measures*"[88]

Spinoza, many centuries later, appears to have accepted some version of this by stating that there was only one ultimate Substance, of which all else were simply modes, existing through attributes of the one Substance and created by the principles or potentials inherent in it, coming into being, and passing away. In this way, all apparent "things" in the universe, including solid inanimate objects, as well as living things and persons are in some sense, processes of the one substance. It is clear that he was not proposing any sort of Parmenidean block or static universe, since he speaks of the developmental potential

[88] Heraclitus. In: Wimbush VL. Valantasis R. 2002. Asceticism. Oxford University Press. p.21

of modes towards self-inherence, and (in the case of persons) "adequate ideas", being conceptual reflections of the true nature of Nature, the Substance itself. These latter may be said to be approximations to, or apprehensions of an analogue to the "logos" of Heraclitus. In this way, the apparent paradox of all changing save the logos, but the logos being all, is resolved, since the logos is both the principles of change, and also the ontological underwriter of all that is changing. But since it is the *totality* in the extension of what Spinoza would call its "infinite attributes" and "infinite modes", of all such attributes and modes, or states of being, the *logos,* in its totality, does not change. I will return to discussion of Spinozistic Substance and the concept of self-inherence in later sections in Section 2 below, but suffice to say at this point that, provided it is accepted that modes are indeed processual, I find it a broadly satisfying view of Nature (which he used interchangeably with Substance and God), and the nature (D3) of Nature (understood as a singular totality), which does indeed, according to the best physics, resemble a hierarchical system of processes governed by "laws" which appear to be sui-generis both of the basic, singular totality and its self-expressions, or processes, at *each level* of the hierarchical continuum.[89] There remains, of course, a problem in this view, which is that to be called truly processual it may perhaps be argued that the Spinozistic Substance itself is not substance, but process. While this is true, since it is the case that the totality of Nature is expressed in processual terms, such that the whole is indeed in flux, it may be argued that process remains ontologically basic even if the totality is singular and unchanging (in a Spinozistic sense) insofar as it never loses its full potential range of infinite modes. However we need not go so far as Spinozas grand balancing act in any case, to defend a thoroughly processual account of all sub-universal-totality events and processes, it suffices for the purposes of this thesis, and indeed the metaphysical view it espouses more generally, that substances are not among the existences ever encountered or explored by agents or science.

So what of the "things" encountered by ourselves as agents in the everyday world, or as scientific explorers of the cosmos? Nicholas Rescher, a modern process philosopher, complains of and documents what he describes as the "revolt against process" in modern

[89] The importance of the specificity of such *emergent* levels will be further discussed below.

analytic philosophy, spearheaded by the likes of Quine, Goodman, Schwayder, Dummett, and Strawson.[90] He complains that the language of modern philosophy has become "thoroughly thingified",[91] where paradigm substances are conceived of as "things", the definite objects we encounter as agents, and in the empirical sciences, such as cars, rocks, lampposts, stars, etc. In his defence of the ontological primacy of process in the face of this "revolt", he buys thoroughly, and perhaps somewhat inadvertently, into the language of substantialist ontology, using "things" to represent substances in the manner against which he should be arguing. A more thoroughgoing process account would, however, discount the idea that any "things" are substances at all. This may seem counterintuitive, and uncommonsensical, but I see it as being the inevitable result of thorough analysis. A good starting point for a discussion on things in this context might be the Heideggerian observation[92] of the etymology of the word "thing", that its meaning derives not from the description of a unity, but indeed a process. A thing, in the Germanic languages from which it emerges, is not a definite, single entity, but rather means a "gathering". We see this usage, for example, in the Icelandic term for parliament, the "Thing", which was a gathering of leaders held in the "Thingvallir", or valley of gathering. How can we see ordinary "things", such as teacups, rocks, stars and mountains as processes? The key is to add temporal perspective. Heraclitus' asserted that "we both step and do not step in the same rivers", usually expressed and interpreted by the famous dictum that "it is not possible to step into the same river twice". [93] Can we walk on the same mountain twice? A *thorough* consideration of geological processes reveals that we cannot. The mountain, despite casual observation, is in effect a constantly changing process, and furthermore, is not bounded, except by convention. It is rooted to the planet, and its extent is arbitrary, it is covered by vegetation, snow, and other such, constantly in flux, which may be accounted as being a part of the "mountain", as well as processes of erosion of the mountain, or deposition of further layers upon it. Seeking a definition of the *particular* mountain in its *essence,* in the Aristotelian sense of essence as substance, is therefore vain. The same applies to stars, wedding rings, and all other aspects of the physical

[90] Rescher N. 2000. Process Philosophy: A Survey of Basic Issues. University of Pittsburgh Press. Pittsburgh PA. pp. 33-47
[91] Rescher N. Ibid. page 35.
[92] Eiland H. 1982. "Heidegger's Etymological Web." *boundary 2*, Vol. 10, No. 2. pp. 39-58
[93] Barnes J. 1979. The Presoctratic Philosophers. Routledge, London. p. 66

world. What these are are manifolds of process constantly in flux, but with some time-*relatively* stable aspects, which allows for conventions of naming, and particularisation. Stars are obviously processes, but also obviously "things". My wedding ring is the accidental conjunction, principally, of platinum atoms, themselves wave-processes, and formed in a Supernova event (or several separate such) in the region of some 5-10 billion years ago. It gradually changes shape and weight, becomes duller and more scarred, as it is worn, changes size, however slightly, as it is heated and cooled. It is a "thing" but it is also, and thoroughly, a comparatively stable stage of many conjoined processes, and looking to the future, will eventually be wholly deformed, its atoms blending back into the general flux of processes.

A nice contemporary example may be used to help illustrate this.[94] In the 1880s, the absolute standard measure of the kilogram was forged as a solid object, indubitably a "thing". It is known as "Le Grand K", and has since been kept in a guarded underground vault in Paris, at the headquarters of the International Bureau of Weights and Measures, housed inside two sealed glass bell-cases, in turn inside an evacuated chamber. It is composed of an alloy of 90% platinum and 10% iridium. It was forged as the ultimate singular reference object for the measure of a kilogram, and remains, at the time of writing, the only object known to science with a mass of precisely 1 kilogram. As such it is the arbiter of the precise metric mass of every other measured object in the human universe. A number of other copy cylinders were made, which originally had exactly the same mass. These were distributed to countries that had adopted the metric system, to use as local arbiters of the true kilogram. Every so often the clones of "Le Grand K" (LGK) are brought to Paris to make certain that they indeed continue to correspond precisely. These objects are among the most intensely monitored and heavily guarded things in the world, but are certainly the most so with regard to the specific criterion of flux in their composition or their mass. If anything should be stable and constant in this way, these should. But starting 30 years ago, it has been clear that there has been drift in the mass either of LGK, or else the clone cylinders, or possibly all of them. Since they are

[94] See BBC article: "Getting the Measure of a kilogram." Available at: http://news.bbc.co.uk/1/hi/sci/tech/7084099.stm [Accessed 12th November 2007]

measured against each other, there appears in principle no way of arbitrating this question. The drift may not seem especially great, equivalent to a little less than the mass of around a grain of sugar in a kilogram of the same, but since scientific instruments measuring masses far below this are calibrated from LGK, it is very significant. But the point here is that even in such an apparently stable, guarded and controlled object, over the duration of what is an eyeblink in even human history let alone earthly geological time, let alone cosmic time, there is flux. At the time of writing, there is currently underway a meeting to attempt a resolution of the problem. The intention is to try to find a method of doing away with any such instantiations of the ultimate measure, as *in themselves being* that ultimate measure itself, and instead to rely upon measures which appeal to what are believed to be universal physical constants (so, conceivable as aspects of the logos). For example, whereas the ultimate reference meter was once an object, a bar of brass, the present reference is the time it takes for light to travel a certain distance (1 meter, of course!) in a vacuum. In this case, it is the temporal measure of the velocity of a process that remains constant. Of course time itself is capable of flux, so further stipulations must be made, concerning the relative frames of reference of the measured light and the measuring instrumentation, but the core idea is clear. The point is that the scientists are conceding that no object, or "thing" no matter what its construction, is immune to change, or flux, and that only the principles of flux themselves are so immune. There is no point in simply embarking on the construction of another LGK, since whatever is constructed is liable to change over time. What is appealed to, however, is that while these instantiations of matter, or what Spinoza would have called singular modes, are indeed inevitably in flux, the principles by which they are ultimately constructed, and by which they have reality, the laws of physics, logic, and mathematics by which they have reality, are perceived as being constant and fixed. In regards to the kilogram, a balance which is calibrated according to the universal constant known as the Planck constant is one of the proposed methods to be discussed, but there are competing views as to how the ultimate measure will forever be calculated. However again, it is not a particular balance which is to be the arbiter, but rather *the fundamental principles which govern the function of its processes, in themselves*.

The example here is of course quite nicely analogous to the Heraclitan rhea and logos. All is in flux, except for the constant measures and principles of flux themselves. Whether there are indeed such constants, and whether the logos itself may be considered, therefore, to be in flux (perhaps just very very slowly indeed) is a discussion which is beyond the scope of this dissertation.

P.F. Strawson's critique of process found in his famous "Individuals" is based upon the purported requirement for things to be substances in order to secure their re-identification, such that we may rationally conduct ourselves in commerce with the universe. He reifies this requirement to the level of asserting that it is a test of ontological primacy itself, asserting that we need things as substances in order to be able to identify processes at all.[95] Rescher correctly critiques this approach by questioning the identifiably criterion that Strawson uses, saying that it is no guide in any case to "primacy" in ontology.[96] He also notes that identification is itself processual in nature, but he could have gone further in his critique. The further step that can be taken is that for reidentification to take place it is not required that there should be unchanging particular substances, but rather that there should be reidentifiable "things", but it is not necessary that these things should be intrinsically changeless in some way *in themselves as material beings*, but merely that they should be reidentifiable. It has already been argued that "things" are likely, on close and thorough analysis, to turn out to be processes in any case. It is, I would argue, indisputable that the sun, the river Nile, and even the continent of Africa are intrinsically changeful processes (Africa being a geological process and a manifold of many sub-processes to see which it is simply required to consider the changes it undergoes on a geological time-scale), but yet it is equally indisputable that they are reidentifiable to the extent and for the purposes of ordinary rational processes engage with them in conceptual navigation of the world. What is key here is that there are sufficient stable elements in any processual manifold to render it identifiable as a particular *process*.

[95] Strawson PF. 1964. Individuals. Routledge, London.
[96] Rescher N. Op. Cit. note 90. pp. 37-41

Section Two: Personhood as Process: The Value of Life and the Value of Life Extension

2.1 The fallacy of immortality

Immortality, with all its echoes, resonances, and baggage, is a term nearly ubiquitous in modern discussions concerning the ethical and social implications of age retardation or life extension. It is used both by the advocates and the critics of these endeavours. It is also a term used in the standard biology that underwrites the present debate, with reference to certain cell lines. For all that, I contend that its usage is entirely illegitimate and misleading with regard to biological organisms or in context of biological or technological interventions made with a view to combating aging and/or else to extend the lives of physically-instantiated persons, no matter how radical such an intervention, and no matter what physical remedy is proposed or what physical form in which it is speculated that such 'lives' may one day be manifest.

The reason for this is simple: immortality is the state of not being subject to mortality. Any being that is dependent upon, or subject to conditions, no matter how robust or fragile these might be, for its continuance in a living state, is mortal. Even a being, in a possible world, that is not invulnerable but which actually does happen to live for an infinite period is nonetheless not immortal. Provided that, had some circumstance been different at any time in that history, it might have died, then through every moment of its existence it remains mortal. I am, as I write this, alive. But I am, as I write this, mortal. The same is and would be true even if the most radical dreams of life-extensionists were to come true, and I were to be subject to some interventions which, in future, meant that I ended up living for an infinite period. Mortality is the condition of any living being within the natural realm. Immortality is a supernatural state of being.

The same may thus be said of so-called 'immortal' cell-lines, such as cancers or germ-lines. No individual in such a line is immortal, and indeed each line is, in its own right, subject to mortality. The vast majority of species or lines of organisms that have ever existed are extinct. Those that are not extinct may become so at any time.

Perhaps I may be accused of pedantry at this point, but I believe that clarity and rigour are urgently needed on this issue for the debate concerning aging intervention and life extension properly to proceed, and clearly to be understood by the public and by policymakers. There is a tendency by thinkers on all sides of the issue to muddy this point, and the consequences of this lack of clarity can be seriously damaging in view of the urgent need for such clarity prior to the emergence of actual life-extending technologies. This is symptomatic of a generalised tendency to blur the lines between the natural and the supernatural, when it comes to discussing enhancement technologies. The PCBE report 'Ageless Bodies' raises this issue explicitly:

> Different human societies have had very different conceptions of the divine, but one attribute has almost universally been attached to the gods: immortality. Our subjugation to death – and our awareness of this fact – is central to what makes us human ('mortals') rather than divine, and it makes us fearful and weak and constrained. The scientific quest to slow the aging process is not explicitly aimed at conquering death. But in taking the aging of the body as itself a kind of disorder to be corrected, it treats man's mortal condition as a target for medicine as if death were indeed rather like one of the specific (fatal) diseases... In principle, the quest for any age-retardation suggests no inherent stopping-point and therefore, in the extreme case, it is difficult to distinguish it from a quest for endless life … It is, at its core, a desire to overcome the most fundamental bounds of humanity, and to redefine our bodily relationship with time and with the physical world. Life-extension does not mean immortality, to be sure—if for no other reason than that the attainment of immortality is scientifically implausible. But the impulse to extend our lives in general, rather than to combat particular diseases or ailments that shorten our lives, is a declaration of opposition to death as such. [97]

[97] President's Council for Bioethics (PCBE) 2003. "Ageless Bodies." Chapter four of the report: Beyond Therapy: Biotechnology and the Pursuit of Happiness. Available at: http://www.bioethics.gov/reports/beyondtherapy/chapter4.html [Accessed January 2008]

It is not an unfair accusation against some of the more prominent advocates of aging intervention and life extension, that they do in fact blur the line between the latter and the quest for immortality, and indeed in some cases appear to see their project explicitly as a quest against death. The literature is littered with examples of rhetoric which proclaim that 'Death is an Outrage',[98] or else declare, as noted in a footnote of 'Ageless Bodies', that 'the real goal is to keep people alive forever',[99] or else herald 'The Scientific Conquest of Death'[100] or explicitly define the ethical discourse about life extension as 'Immortal Ethics'.[101] Some of the more extreme of these verge on making the error which is the central joke of Chaucer's Pardoner's Tale, echoing the call: 'let us join hands as brothers, and kill this traitor death!'[102] But as the passages quoted below illustrate, it is an error committed in loose talk on both sides of the discourse. There are several reasons why this might be true. One is that, as John Harris notes in his essay 'Immortal Ethics', we have been familiar with immortals, or talk of them, from time immemorial, precisely from religion and the tales of the supernatural. In this he is absolutely on the money, but far from being helpful, I contend this is precisely why all involved in this discourse must more carefully observe the strict delineation between the possibilities afforded by the natural sciences and those exclusively belonging to the category of the supernatural. Harris then goes on to state in the clearest possible terms what I am here explicitly denying:

> Note that immortality is not the same as invulnerability, and even 'immortals' could die or be killed.[103]

But this is simply to say that the 'immortals' are 'mortal'! To suggest that aging intervention could render us immortal is simply to state that the definition of immortality

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[98] Freitas R. 10th Aug. 2006. Death is an Outrage. Lecture, 5th Alcor Conference on Extreme Life Extension. Slides available at: http://www.rfreitas.com/Nano/DeathIsAnOutrage.htm [Accessed January 2008]

[99] W. Haseltine. *Science* 22 December 2000; 290: 2249. Available at (requires subscription): http://www.sciencemag.org/content/vol290/issue5500/r-samples.dtl [Accessed January 2008]

[100] Immortality Institute, 2004. The Scientific Conquest of Death: Essays on Infinite Lifespans. Available at: http://www.imminst.org/SCOD.pdf [Accessed January 2008].

[101] Harris J. 2004. "Immortal Ethics" *Ann. N.Y. Acad. Sci.* **1019**: 527-534

[102] G. Chaucer. Pardoner's Tale ll. 412-414 The translation to modern English is my own, and refers to no particular modern text.

[103] Harris J. 2004. Op. Cit. note 101.

rests solely upon its being the antonym of senescence, which it surely does not. Clarity is urgently required. The reason is that such talk inspires deep confusion about the nature and motivations of the project of aging intervention or extension of personal life, and allows for illegitimate, or misdirected argument to be applied on all sides. This allowance is, I believe, a significant factor in the antagonists of aging intervention's refusal simply to reject all such talk as being nonsense, since they find, in such blurring, convenient areas of conceptual vulnerability. They seek to exploit a perceived weakness on the part of some of the opposition in terms of their motivation- that this motivation in some cases boils down to a yearning for an altered metaphysical relationship with the universe. Consider this, from Kass's essay, 'L'Chaim and its Limits: Why Not Immortality?':

> Homer's immortals, Zeus and Hera, Apollo and Athena – for all their eternal beauty and youthfulness, live shallow and rather frivolous lives, their passions only transiently engaged, in first this and then that. They live as spectators of the mortals, who by comparison have depth, aspiration, genuine feeling, and hence a real center to their lives. Mortality makes life matter.[104]

This passage is typical of the species of argument posited by critics of life extension that seeks to use the purported benefits of mortality and the horrors of the 'menacing spectre of immortality'[105] as its motivating principle. But the confusion here is obvious, and while Kass, in common with some others who use the term, clearly acknowledges elsewhere that whatever physical interventions may be taken, physical persons will remain mortal and strictly distinct from supernatural 'immortals', he appears, in common with other commentators, to forget or to blur this distinction when the occasion suits. So long as we are mortal, even were we not subject to senescence, which is a very tall order to begin with, we will be subject to extrinsic disease, cancers, radiation, accident, war, meteorites, unhealthy habits and addictions, obesity, depression, suicide, famine, murder, stochastic events and all the other 'slings and arrows of outrageous fortune' and we will never know with any certainty when the 'midnight hour' might strike, right up until the

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[104] Kass L.R.. 2001 Op. Cit. note 1.

[105] Gurarente L. 2002. Ageless Quest: One Scientist's Search for Genes That Prolong Youth. Cold Spring Harbor Laboratory Press.

heat death of the universe[106] itself! It is a central observation, which the argument from indefiniteness glosses over, that our life spans are presently indefinite, and if senescence were to be 'cured' then our life spans would remain indefinite. Furthermore, so long as we remain subject to the second law of thermodynamics,[107] we will never have to worry about not having to worry, or for that matter, ceasing to strive! It is precisely these features that distinguish us forever from 'immortals'.

Canonical conservatives who offer critiques of a motivation towards an altered metaphysical state, namely immortality, from the point of view either that it is bad in some way in itself, or dehumanising, or other similar, should be careful to note that while their fire has no significant effect upon the project of life extension in the natural realm, it may well rain down destruction upon the motivation to seek its true target: supernatural immortality itself! On this note, there is a fascinating symmetry to be observed between the viewpoints of the canonical conservatives, and those of the secular liberals who declare aging intervention to be a project towards immortality: they betray, each in their own way, the very fundamental aspect of specifically human nature that is the longing for immortality itself. Could it be that in seeking an answer to the riddle of the value of life extension to persons, simpliciter, we may uncover its source?

[106] Or its equally dismal alternatives: 'cold' or 'crunch'!
[107] I do not mean to suggest that this makes senescence inevitable. It just makes effort inevitable, and life unstable.

2.2 The disvalue of death

Can death *in itself* be argued to be something so negative that its very occurrence may be used as a justification for life extension? If biogerontologists seek to extend life, are they mainly, as well, or at all seeking to stave off death itself? It has been argued, in particular by John Harris, that life extension is death postponement.[108] While the postponement of death may explain a *particular* person's motives in seeking to extend a life it is not necessarily the case that this motivation is well founded, nor that "life extension" and "death postponement" are one and the same concept. I may feel tired of life, and find no instrumental nor perhaps accept any intrinsic[109] value in its extension, but nevertheless wish to postpone my death. Such a desire may, in turn, *appear* not be motivated by a wish to extend life but rather from some notion of the disvalue of death. Perhaps death in such a case is feared as something negative in itself - as a kind of anti-life, just as darkness is conceived in Milton as a kind of anti-light, or "darkness visible."[110] Or else perhaps it is feared, as in the case of Hamlet, simply because it is an unknown quantity:

> To die- to sleep-
> No more; and by a sleep to say we end
> The heartache, and the thousand natural shocks
> That flesh is heir to. 'Tis a consummation
> Devoutly to be wish'd. To die- to sleep.
> To sleep- perchance to dream: ay, there's the rub!
> For in that sleep of death what dreams may come
> When we have shuffled off this mortal coil,
> Must give us pause. There's the respect
> That makes calamity of so long life.[111]

[108] Harris J. 2002. "Intimations Of Immortality – The Ethics and Justice of Life Extending Therapies." In: Freeman M. (ed.) Current Legal Problems. OUP.
[109] For those unfamiliar with the use of these terms in philosophy, what is meant by instrumental value is value for some further end or purpose, as opposed to intrinsic value which is valuable in and of itself.
[110] Milton, J. 1667. Paradise Lost. Book One.
[111] Shakespeare W. 1604. Hamlet III;i.

Equally but very differently, I may conceive of death as being nothing to be feared at all. This may be so if I come to believe, based on available empirical evidence, that death is not even comparable to the unconsciousness of dreamless sleep, but rather is a total oblivion and non-existence in which there is no longer an "I" upon whom suffering or disvalue may alight. The Greek philosopher Epicurus argued for just this conclusion:

> Make yourself familiar with the belief that death is nothing to us, since everything good and bad lies in sensation and death is to be deprived of sensation… For there is nothing to be feared in living for one who has truly comprehended that there is nothing to be feared in not living… So [death] is nothing to the living and nothing to the dead, since with regard to the former, death is not, and as to the latter, they themselves no longer are.[112]

In the latter case, postponing my death would appear to have no particular import from the perspective that death is a bad thing in itself, since death is *no thing in itself*. So in the case of a person who accepts this view, action taken which happens to postpone death could only be fairly said to be motivated by the intention to extend life, since motivation to postpone death on its own would be unintelligible.

We do not have, and probably will never have, evidence as to the possibility or nature of death (as opposed to dying) as an experienced state of being. Because of this, I argue that we should bracket any concerns along these lines, and go with Epicurus' view on the badness of death,[113] instead concentrating upon what is valuable in life, as the only reasonable justification for efforts to extend it. In doing so, it should be noted that it is not necessary that one should accept the entirety of the implications of the Epicurean position. It is not necessary that one accepts that death is indeed utter annihilation, although one might, but only that one accepts that there is no current indication whatever (pace spiritualist claims of communication with the dead!) concerning death as an experienced state of being, and so no reason to favour one view over another. The

[112] Epicurus. Letter to Menoeceus (124-5). D.Furley (trans.) (1986) "Nothing to us?" In: The Norms of Nature, M.Schofield & G.Sriker (eds.) Cambridge.

[113] Though not, necessarily, with his other views on the matter, as Epicurus contends also that "the right recognition that death is nothing to us makes the mortality of life enjoyable, not by adding infinite time to it, but by removing the desire of immortality."(ibid.) However he here seems to feel that desire for immortality, and also arguably the separate case of life extension, is primarily located in fear of death. As I suggest, this is the wrong emphasis in any case.

adoption of the consequences of the Epicurean view remains fully justified by such an agnostic position.

If the above analysis is accepted, of course, a significant question remains: can be that death is not bad in any way. How can that be? Are all our fears about and distaste for death unfounded? And what of prohibitions concerning death? If death is not bad in itself, could such a view not remove the badness from murder, provided it is conducted suddenly, and without expectation or pain? More relevantly here, if death is not bad, then why make special efforts to prolong life?

Well, of course, there is a way in which death may still be accounted as bad. On this view death is not bad *in itself*, but rather the badness of death depends upon and becomes relative to what it negates, namely the continuance of life. Death is bad because of what we lose by it. So if we want to assess the ethics of life extension, we must consider the value of life, and most particularly, the value of life's *continuance*, rather than concern ourselves with any purported disvalue of death as a thing or state in itself.

The badness or disvalue of death for our purposes, then, inheres solely in what it negates, which is the continuance of life. If death is bad it is so because of what we lose by it, and if what we lose by it is the continuance of our persons, and in particular what we as persons desire, wish, have plans for, hope for etc., then this picture remains ungrounded without an account of what fundamentally *motivates* such desires, wishes, plans and hopes. For without such motivation, there can be no loss in their unfulfillment. Underlying and motivating these future-good-directed aspects of ourselves is some more fundamental aspect from which they arise, and without which they become meaningless. To put it in terms of the thesis outlined below, death is bad insofar as it frustrates, or cancels the actualisation of the categoric future-directed desire, nisus, or conation, and in so doing, ceases the *process* of personhood, from which all particular desires arise, and in relation to which they have value.

2.3 The value of life: sanctity and life plans: crossing the liberal/conservative divide

The emerging discourse has some familiar and some very unfamiliar features. Over the past few decades, we have come to be familiar with what has been termed the conservative/liberal divide in bioethics over matters specifically relating to the end of life, and of life's continuance. Traditionally, the primary areas of conflict have been those of suicide, abortion, and euthanasia. Broadly speaking on these issues, conservatives have tended to adopt more negative, prohibitive stances towards all of these practices,[114] stances that have generally been characterised, especially in the politicised popular areas of the discourse as 'pro-life'. Equally broadly speaking, liberals have tended to adopt more permissive positive stances towards these same, in a mode that has generally likewise been characterised as 'pro-choice'.[115]

Broadly speaking once again, those of the conservative persuasion are usually adherents to canonical, content-full interpretations of what has been termed the value of life, arising, to a large extent, from religious tradition, focussing on such concepts as the sanctity of life, or the intrinsic value of life particularly to humans as a distinct and arguably unique category and condition of being. Equally, those of the liberal persuasion are usually more secular, rejecting such canonical, content-full interpretations in favour of those that focus upon the subjective and instrumental value of life to persons, a concept which importantly is decoupled from the necessary association with the category and condition of being human.

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[114] e.g. Callahan D. & Campbell CS. eds. 1990. "Theology, Religious Traditions, and Bioethics." *Hastings Cent Rep*. Jul-Aug; 20(4): S1; Joseph Cardinal Bernadin. 1988. Euthanasia: Ethical and Legal Challenge. *Origins* 18: 52-1; Kass LR. & Lund N. 1996. "Physician-assisted suicide, medical ethics, and the future of the medical profession." *Duquesne Law Rev*. Fall; 35(1): 395-425.; For a general description of the liberal/conservative divide see: Holland SH. 2003. Bioethics: A Philosophical Introduction. Polity Press, Cambridge. pp. 58-67

[115] e.g. Harris J. 1985. The Value of Life: An Introduction to Medical Ethics. Routlege, London; Glover J. 1977. Causing Death and Saving Life. Penguin Books, Harmondsworth, England.

The lines of the emerging discourse concerning radical life extension thus far have rather blurred the classic liberal/conservative divide on life ending or extending issues. For example, some of those in the conservative category appear to have taken a line that might be thought of as an inversion of their usual position on life and death issues: in this case, they appear broadly to be *opposed* to life extension.[116] Equally, some of those in the liberal category have taken an almost evangelically strong supportive stance towards radical life extension.[117] Other liberals, perhaps equally surprisingly, have taken cautionary or negative stances, but ones whose bases appear to have strikingly conservative features, advocating a limitation of human prerogative to intervene in 'nature'.[118]

What I propose, briefly, is as follows. In the face of the arguably new question of whether we should, *ceteris paribus,* seek to extend *healthy* life span, and given the blurring of the classic lines between the liberal and conservative positions on this *kind* of question, a re-evaluation of the fundamental motivating principles is in order. Given the common claim that traditional 'pro-life' conservative positions have been motivated by concepts of the *intrinsic* value of life, what is implied by the conservative resistance to radical life extension? Equally, what of the liberals who appear to be adopting an apparently 'anti-choice' stance on this? Also, in view of the classically secular and fairly sanguine liberal approach to the extinction of both human 'non-personal' and human 'personal' life, whence comes the apparent temptation for some liberals to argue for an all-out drive towards what is described, in the more extreme cases, as 'immortality'? I will address these issues in turn, and will seek to show that in each case this apparent inversion or shift in attitude betrays either weaknesses in the parties' commitments to their own more generally stated principled positions on the value of life, or else in the construction of the same. I will then seek to address this situation by suggesting that what is missing from the picture on both sides is a specific acknowledgement of and engagement with the issue of the value of *extension* in time to persons as *processes*[119] rather than as fixed beings of a

[116] e.g. Kass LR. 2002 Op. Cit. note 1.
[117] Harris J. Op. Cit. note 101
[118] M. Sandel. 2002. Op Cit. note 25
[119] Horrobin S. 2006. The Value of Life and the Value of Life Extension. *Ann NY Acad Sci* 1067: 94-105.

fixed substance and changeless identity. It is not, however, that such a position has long existed within the discourse, is widely recognised and is being ignored. It is rather that such a concept has not, hitherto, formed a clearly identifiable part of the discourse concerning life extension at all. I will argue that not only is it a useful idea in elucidating the deficiencies of the discourse as it stands, and of the various classical positions and assumptions which underpin it, but that it is indeed the correct view, and that a proper understanding of this view furnishes significant advances in both the elucidation of the questions at hand in the discourse concerning life extension for persons, and also more widely in the metaethical discourse concerning the naturalisation of norms and of the persons who predicate them. In this manner, in view of the blurring of classical positions on this issue, and the deficiencies I argue this reveals in them, it is possible that the model I propose of personhood may, if accepted, offer some opportunity of reconciliation between conservatives and liberals on the issues of life extension, the death of persons, as well, perhaps, as helping to clarify both the ontology of persons and the nature of ethics itself.

2.4 The conservative position on life extension: the sanctity of life, nature, and the role of prerogative

In the canonical schema from which classic and modern conservative positions regarding the value of life and attitudes to life and death issues generally arise, the values of the bodily and fleshly life have traditionally been held to be of secondary importance, worldly concerns which obscure and abstract away from the true and underlying value of existence: the life of the *immortal soul* in its eternal relationship with the Divine.

Adherence to such a schema *alone* would appear to be obviously impractical and self-limiting, as it would be inimical to the maintenance of a functioning ethics of the bodily living world. Such a radical position has historically led to the establishment of suicide cults or sects, and arguably may be said to underpin the present scourge of suicide attacks, such as those against the US in 2001, and in innumerable other cases in Iraq, and elsewhere in the world. Religious and socially conservative movements have therefore formulated various strategies to defend more 'pro- (bodily) life' positions. These additional schemas for grounding the ethics of bodily life and death may generally be described as concepts of the sanctity of life.[120]

Essentially, the doctrine is that life is a gift to the person who is alive, and the wilful rejection of this gift (so, suicide) or else the taking under whatever circumstances of it away from another (so, murder and also abortion and euthanasia) are infringements of the divine prerogatives which the giver (traditionally God) is held to retain over this gift.

It is noteworthy that the retention of prerogatives by the 'giver' here already abstracts away from any ordinary definition of 'gift'. Ordinarily one conceives of a gift as being an absolute rendition of a thing from one person or subjective being to another person or subjective being, which relinquishes control or prerogative entirely on the part of the

[120] Kuhse H. 1987. The Sanctity-of-Life Doctrine in Medicine: A Critique. Oxford: Clarendon Press.

giver. The idea of the 'gift' of life being one in which prerogatives are retained by the giver, such that obligations are owed by the possessor to that giver throughout the duration of that gift appears very much more like a leasehold contract. One may perhaps think of circumstances wherein it is accepted that one has been, say, 'given' a few weeks stay at the villa of a wealthy acquaintance. Such a 'gift' would represent, to some degree, this kind of a leasehold. The 'giver' does not 'give' such a gift unconditionally, but rather in a time-limited framework, and no doubt within certain restrictions. For example it is usually understood, but may be stated explicitly, that the recipient of this benefice may only use certain rooms or elements of the property, and may only stay for a very particular limited period, and may also not abuse the privilege of the 'gift' by damaging the property, or otherwise misbehaving. I think that something like this is likely what the framers of the 'gift of life' idea had in mind. Surely, however, such a gift is indeed more in the form of a lease, even if no token value is exchanged for its purchase, since it is given in exchange for restrictions, both temporal and otherwise, which must be abided by. In this way the right of stay in the property is not given wholesale, but given conditionally, and to some extent in the form of a lease, which may be revoked at any time. It is common, after all, to describe a newly optimistic, or rejuvenated person, or more relevantly one who has been given a reprieve from an expected death within a particular time-frame, to have been "given a new lease of life". But what sort of leasehold is this? It is not a leasehold for the holder to spend some lifetime in a place, rather it is a leasehold *for the very life of the leaseholder*. The picture is of course significantly complicated by the idea of the immortal soul. In this case, the most fundamental part of the leaseholder cannot die in any case. This results in something of a dilemma for the view, since if what is spoken of does not take account of the immortal soul, or discounts it, then the lease is also for the leaseholder's *existence at all*, but if what is accounted to be most important is the soul, then the leasehold itself appears to become rather meaningless, as the leaseholder cannot die in any case.

I consider that this dilemma is serious but will not seek further to discuss the issues concerning the "immortal soul" as these are primarily theological concerns whose subject

matter is to a large extent outwith the scope of this dissertation, which certainly does not seek to discuss increases to the longevity of immortal souls! This is not in any way, however, to accede to a lessening of the severity of this second horn of the dilemma for those who wish to accept such a concept. Rather, I consider that the immortality of the soul renders the sanctity concept, to a large extent, unintelligible.

As to the former horn of the dilemma, we may say that the lease of bodily life alone, to one whose existence *depends upon* the "lease", is a lease without mutual contract, or with a contract which is entirely one-sided, its terms never having being acceded to by the recipient. Consideration of the reason for this leads to another very serious problem for this conception of life's "value": the idea that a basic predicate of existence may be 'given' or more accurately 'leased' to the one who then exists is philosophically dubious. If life is a gift, *to whom* is it a gift? How can *my* life be a gift, *to me*? If a leasehold, between whom *and whom* is the contract, if the contract itself is the structure by which the leaseholder themselves comes into being? Such a "contract" is not, by ordinary concepts, a contract at all, but rather, given its restrictions and the traditionally extremely stern consequences for their breach, it is an imposition. Of course, the enactment of such consequences entails acceptance of the immortality of the soul, which throws us back to the second horn of the dilemma. But if we accept only the first horn, in context of the debate concerning life extension, if this "sanctity" principle has anything whatever to tell us concerning our lack of prerogative to *extend* life (see below for clarification), what motivation could the contractee possibly have to respect the terms of a contract whose fulfilment mandates their own annihilation? Can such a contract be said to represent "value" for the life in question, *qua that life itself*? Certainly it becomes very difficult to defend the view that on this construction the value of life has any intrinsic in the sense of *internalist* foundations whatever. Such a value of life does not regard the interests of the one who is alive, nor does it describe or represent an elucidation of the value of life, qua life or living itself, or the particular life that is lived, but solely those of the conjectural external constructor of life in general and that life in particular. Insofar as this is true, it might be said that on this account there is no internal account given of the value of life whatever, and that in absence of some further story or account, life has no intrinsic value

whatever, but only an extrinsic value, which is predicated by an external valuing agent, apparently capable of subjective choices. Consider the following from John Haldane and Patrick Lee:

> In short, for John Paul II to say that human life is of incomparable value is not to 'place human beings at the center of the moral universe'. On the contrary, it is to say that human beings have this special and inestimable value inasmuch as they are created in the *image* of God (*imago dei*) and in order to come to participate supernaturally and eternally in the life of God. That beings should be created with this nature and for this end is indeed a manifestation of God's goodness. It also explains why even on earth human life is a 'sacred reality entrusted to us' and why intentionally to take innocent[121] human life is 'a negation of the honour due to the Creator'. Far from there being a difference between John Paul and Aquinas on this matter the former frequently cites the latter and uses formulations drawn from the *Summa Theologiae, Prima Secundae* – such as that 'all that man is, or has, or can be is ordered to God.' [122][123]

Certainly, the traditional Catholic view (in line with any Christian views of Christ as a person, and God) is that the godhead is most certainly a *person*.[124] Given this, apart from the obvious differences between divine and mortal personages, there seems no particular structural difference between the theistic conservative account, and the secular liberal account, at least insofar as neither one recognises an *absolute* or non-contingent value for life of the living organism, *qua organismic life itself*, or an internalist, non-person predicated, and truly objective value.

Leaving these rather serious difficulties to one side for the moment, in view of this classical picture of life's value which appears to underpin the conservative attitude

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[121] The use of the term "innocent" as a qualification of the prohibition against killing is common, even pervasive in Catholic writing on the subject. This represents itself an exemplar of the reduction in status of the value of personal life in this schema, such that only "good" life is worthy of protection. The many instances of commanded killing in the Bible are often justified by this means. Life is not *intrinsically* good, its goodness is entirely contingent, and depends upon a separate standard, which is wholly extrinsic and represented by the will of the Lord.

[122] Haldane, J. Lee, P. 2003. "Aquinas on Human Ensoulment, Abortion and the Value of Life." *Philosophy* 78: 255-278

[123] Notice the equivocation on the meaning of the word "life" which is both "eternal" and something that we can "take" away.

[124] See e.g. the online Catholic Encyclopedia at: http://www.newadvent.org/cathen/07706b.htm [Accessed January 2008]

towards radical life extension, the inversion referred to above focuses upon the notion of prerogative in this schema of the value of life and an intuition concerning the implications of this as regards endogenous longevity. If it is the case that life itself is fundamentally a gift (or leasehold or whatever) 'designed' and 'ordained' by God, then the fundamental circumstances that attend it, such as the endogenous span of the lives of humans, will be held to be similarly part of the ordained design, which may be thought of as constituting the frame of the gift itself, intrinsic to its structure. Given the above-described commitments of this schema, it is possible to see how it is thought that this frame, the given structure (and so endogenously-predicated length) of biological human life, therefore falls within divine prerogative. The idea that humans in particular, and exclusive of all other living things, are made in the 'image' of God, and also that death through aging arises from Original Sin form key aspects of this schema. With regard to the latter concept, the originating passages are to be found in Genesis:

> Unto the woman he said, I will greatly multiply thy sorrow and thy conception; in sorrow thou shalt bring forth children; and thy desire shall be to thy husband, and he shall rule over thee.
>
> And unto Adam he said, Because thou hast hearkened unto the voice of thy wife, and hast eaten of the tree, of which I commanded thee saying, Thou shalt not eat of it; cursed is the ground for thy sake; in sorrow shalt thou eat of it all the days of thy life;
>
> Thorns also and thistles shall it bring forth to thee; and thou shalt eat the herb of the field;
>
> In the sweat of thy face shalt thou eat bread, till thou return unto the ground; for out of it wast thou taken: for dust thou art, and unto dust shalt thou return.
> …
> And the Lord God said, Behold, the man is become as one of us, to know good and evil: and now, lest he put forth his hand, and take also of the tree of life, and eat, and live for ever:
>
> Therefore the Lord God sent him forth from the garden of Eden, to till the ground from whence he was taken.

> So he drove out the man; and he placed at the east of the garden of Eden Cherubims, and a flaming sword which turned every way, to keep the way of the tree of life.[125]

The standard (chiefly Christian) interpretation of these passages is that, for the apparent crime of disobedience, and saliently for the crime of disobedience involving the gaining of knowledge of good and evil, by which must surely be meant, moral judgement[126], Adam and Eve and all their descendants are condemned to death, meaning not that they would have died previously, and were prematurely precipitated into death at this point or had their expectancies curtailed, but rather that that death as a principal and defining condition of life, entered the world at this point. The implication is that Adam and Eve, together, perhaps, with the rest of the biological realm, were essentially deathless, until the Fall. They were not, after all, forbidden expressly *up until this point* from eating of fruit of that other magical tree in the garden, the tree of Life, and from Genesis 2; 16-17 it appears perhaps that permission was in fact implicitly given so to do. It is unclear whether the eating of such fruit would be a single dose passage to eternal life, or whether continual eating of it would be required, but perhaps speculation here is taking things too far in any case. However it is most clear that according to this story God intends that they, and their descendants should not so eat, and should not thereby elude the punishment, which was the judgment upon Adam and Eve for their transgression. From this it may perhaps be argued that the extension of lifespan by endogenous reframing of the predicates of aging, and therefore the ordained frame of life may represent a blasphemous attempt to storm the gates of Eden. The whole picture is very murky, however, and is complicated, as has been noted by Arthur Caplan[127] in reference precisely to the conservative opposition to endogenous life extension, by the fact that immediately following this episode we are told that Adam lived to the age of 930 years, his son living likewise to a strikingly great age, and so on:

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[125] Genesis 3; 16-19 and 22-24, KJV.
[126] One of the very many problems with this story is that it seems reasonable to suppose that, prior to having eaten of the tree of knowledge of good and evil, it would not have been possible for either Eve or Adam, or for that matter the Serpent, to know that disobedience, in itself, was against the good!
[127] Caplan A. 1992. "Is aging a disease?" In: Caplan A., If I were a Rich Man Could I buy a Pancreas? And Other Essays on the Ethics of Health Care. Indiana University Press, Bloomington.

> This is the book of the generations of Adam. In the day that God created man, in the likeness of God made he him;
> …
> And Adam lived an hundred and thirty years, and begat a son in his own likeness, after his image; and called his name Seth:
> And the days of Adam after he had begotten Seth were eight hundred years: and he died.
> And Seth lived an hundred and five years, and begat Enos:
> And Seth lived after he begat Enos eight hundred and seven years, and begat sons and daughters;
> And all the days of Seth were nine hundred and twelve years: and he died.[128]

And so on. Now it has to be said that I do not myself take this story seriously, and consider that it is essentially mythology, but it is important to recognise that whatever one's attitude towards it, this story forms the basis or else the touchstone of much conservative argument against life extension by endogenous intervention, and so it must be dealt with in this context. It is important, for example, to recognise that this story is the root of the nexus of ideas that motivate and ground the conservative conception that *biological* humanity is co-extensive with personhood, and thus moral respect. The concept relies upon the ordination of man (humanity) by God, at this juncture of theistic universal history, in a special place of dominion over the rest of the natural world, and in particular the rest of the biological realm. This dominion is considered to be granted in view of humanity's being created in the "image" of the divine ordinator. The most prevalent hermeneutical position on what this means in turn is not that God may be seen as a kind of primate, with ten fingers and ten toes etc. Despite the frequent depiction of the godhead in this mode, it is rather that humanity shares with God access to the Logos, or the rational structure of the universe.[129] Humanity is rational, and therefore participates in, or at least reflects the divine "image".[130] However, if it is the capacity for rationality, or in the Thomist conception, the capacity for a being to accommodate a rational soul, which matters, then not even the most radical ambitions of the transhumanists will cause us to deviate from this view of personhood, since none intends that we shall deliberately

[128] Genesis 5; 1 and 3-8. KJV.
[129] The gospel of John is most explicit in this way, and is obviously heavily influenced by Greek thinking in this area.
[130] Altmann A. 1968. "*Homo Imago Dei* in Jewish and Christian Theology."
Journal of Religion, XLVIII p. 254

engineer rational capacity out of the constitution of the future descendants of humanity. Positions which attempt to defend the idea that biological humanity is co-extensive with personhood on other grounds are subject to what I consider to be devastating counterexamples, such as that of anencephalic foetuses, or foetuses which develop to term without any brain matter above the stem, and in some cases, with none at all, and teratocarcinomas, which possess the genetic and physiological characteristics of humans, are the products of reproductive conjunctions, and develop in the womb, but do so in a manner which is thoroughly disorganised, with nervous, muscular, bone and other tissue growing in a jumbled mass. Such prodigies are undoubtedly human in terms of their genetic identity, gross matter, and origin, but they are surely not in any way whatever, persons. The typical manner in which conservatives seek to ground arguments against early-term abortion, for example, a case wherein no rational capacity is present, (in which Aquinas himself, following Aristotle, appeared to recognise that there were insufficient biological substrates to support a "rational soul") is one involving the concept of potentiality. This defence raises issues of substantial identity, chiefly against potentiality, from *actuality*, by staunch substantialists, as we shall see. I will deal further with the issues raised by the idea that humans and persons are coextensive when discussing the idea of persons as substances in section 2.5 below.

There are further significant problems with the sanctity picture of life's value. The first is that, in absence of a belief in or warrant for the particular concept of the divine which underwrites it, or in the presence of wholly secular convictions, this conception gives no grounds or explanation whatever for the value of bodily, or more pointedly, of personal life. It is perhaps for this reason that many among the religiously-committed public consider that, in absence of a faith in the Divine, there will be no morality. This idea reached perhaps its clearest formal expression in the words of Dostoevsky: "If God is dead, then all is permitted." An utter absence of a secular morality in the fabric of a society may therefore be seen to be a perilous deficiency, especially in view of the further problem of doctrinal interpretation regarding a strictly religiously constituted ethics. Since the above conception requires a *very particular* interpretation or construction of the additional conception of Divine prerogative, in order to underpin a functional ethics of

the living world, conflicts between interpretations, especially as when they amount to inflexible dogma, can result in ethical gridlock, and profound, indeed intractable sociological division. Quite apart from the more extreme cases of rejection of the sanctity schema altogether by suicide sects and the like, such conflicts of interpretation are not difficult to find. As David Hume pointed out,[131] if it is claimed that we may infringe God's prerogative by the taking of life and so altering the divine timing of death, by this same token we may apparently likewise infringe the divine prerogative by intervening to save a life as well. Something like this idea is appealed to, for example, by significant religious groups such as the Jehovah's Witnesses, who consider that medical intervention, especially of particular forms which alter the construction of the body or blur lines between bodies, such as blood transfusion, is explicitly contrary to God's prerogative in life and death matters. More generally, in Christian funeral services throughout the world, it is common to quote the Biblical text: "The Lord giveth, and the Lord taketh away".[132] By this it must be meant (or intended doctrinally) that the actual instantiation of the event of death, even at an early age, or in defiance of every medical effort to save the life, say, of a young accident victim, does indeed fall within that Divine prerogative. Very significant consequences flow from exactly how this prerogative is interpreted, and where the line between the prerogative of the Divine, and that of human persons, is drawn. But there appears no generalised consensus upon where such a line might be drawn, as well as no particular prospect of there being such a clear line in future, as technologies evolve which throw up possibilities for intervention wholly undreamt-of by the writers of Biblical scripture, with the concomitant fact that no text exists which may unambiguously (or in many cases, at all) deal with such issues.

Further, the fact that there have historically been disagreements in the interpretation of the extent of significance of the concept of the Sanctity of Life, shaky guarantor of the brief, ephemeral span on earth, often denigrated in Memento Mori and Vanitas art and literature, but more general consensus that the true and ultimate value lies in the attainment of the eternal relationship with the divine in the afterlife, constitutes a

[131] Hume D. 1978. "On Suicide." In: Ethical Issues In Death and Dying. T.L. Beauchamp & S. Perlin eds.: Prentice Hall, Englewood Cliffs, N.J. pp.105-10.
[132] Actually, despite its common use, this is probably a grammatical corruption of KJV Job 1: 20-21

dangerous disbalance. Life's value, for believers, the value of this world, lies at the short end of a vast lever, whose fulcrum is death, and whose other end is both infinite in extent, and infinitely weighty. Whether in each case it is true that some sanctity principle or other succeeds in counterbalancing this lever, it remains true for all cases that the relation is desperately precarious, and weighted always in favour of the purported world beyond death, seen as a portal and not an end, and this situation cannot fail to reduce interest in and emphasis upon the values of this world. The concept of the realm of the living world as expressed by C.S. Lewis', as a kind of "shadowland"[133] perfectly expresses this relation. The transformation, the end of the world seen in the climax of his children's book, The Last Battle, directly mirrors the Apocalyptic vision of John of Patmos, and betrays the yearning for the destruction of this world, and the end of not only of this life for particular individuals in this world, but rather for the world itself, and all worldly life. This denigration of the values of this world nestles close to the breast of any religion which accepts this metaphysical view of reality.

It would appear that a generalised and wholly secular ethics concerning such issues is required to deal with these risks and possibilities, at the very least as a kind of fall-back, or safety net, both in order to resolve conflicts between such positions, if not conceptually, then de-facto, and in law, and more positively in order to constitute a dynamic and evolving arena of independent ethical evaluation, capable of dealing with both conflicts between these on classical grounds, and also with novel situations and questions as they arise from technological, cultural, and sociological innovation. Further, such a secular ethics is absolutely required to fulfil the needs of the secular generality. Of course such an ethics is not merely required, but extant and functional, and ethical thinking in no way intrinsically depends upon religious concept in any case. But if such a secular ethics is indeed required, extant, and functional, then the question inevitably arises as to whether a religious ethics is in fact necessary in such cases, at all, and indeed whether it may, instead, be positively harmful. [134]

[133] From the title of the final chapter of the final book in the Narnia series, The Last Battle: "Farewell to the Shadow-Lands".
[134] Holloway R. 1999. Godless Morality: Keeping Religion Out of Ethics. Cannongate, Edinburgh.

There are significant further problems for the concept of sanctity as constituting an intrinsic value, specifically as it refers to the ethics of life extension, which will be dealt with in the subsequent subsection but first I will make a connection between this concept and the subject matter of Section One above, which will also be further dealt with below, in subsection 2.6.

There is a nexus between arguments concerning the prerogative of humans versus the prerogative of God, and those concerning the prerogative of humans versus the province of the 'natural', which is somehow held to be morally prime. The latter is commonly used as a fall-back position in an attempt to secularize what is essentially a religious schema, which involves the idea that nature in both the senses of physical and biological nature, including our own, is given to us by Divine creation and in that way is framed and 'ordained' by God, and should be respected for that reason. That this is intuitively widely accepted is evidenced by the common acceptance of at least the sense of the notion that human interference, say, in the human genome, would constitute a clear case of 'playing God' as well as being 'against nature'. It seems likely that the origins of this nexus lie in the idea of nature itself as being a Divine creation, such that its principles are subject to Divine ordination. What remains unclear, however, is once again the extent to which, on this schema, human interventions in the "natural" are permissible.

In view of this we may clearly see why, in conservative canonical religious or content-full bioethics, the inversion of attitude in respect of the usual position takes place in context of the question of radical life extension. What is fundamentally objected to is not that persons shall enjoy more life. Rather it is an expansion of the area of human influence, and thus prerogative that is so uncomfortable for this view. The supposedly 'pro-life' positions are not, then, 'pro-life' at all, as the conservative opposition to radical life extension uncomfortably reveals. Rather, they are 'anti-prerogative' or 'anti-choice' as regards human agency over fundamental biological predicates.

Among others, I have above and elsewhere rejected the idea that humans can intervene in nature in a way that is beyond the scope of and so harms the natural, and should therefore

have limited prerogative so to intervene.[135] In a general sense applicable in particular to biological interventions, the total set of the 'natural', can only rationally be understood to be that set of things which is within the physical universe which is to say within a single space-time manifold, which obviously includes the entire biological realm, humans themselves, and the product of all human agency. Hume basically agrees with this and denies that we may infringe God's prerogative in any case, since if extant at all, it is pervasive as nature itself and applies to all our possible acts.[136] With regard to the "natures" of human persons themselves, or other organisms, the intervention of humans is to a large extent morally neutral. It may *become* positive, or negative, depending upon the natures of those beings, but the question is not to be decided beforehand by a kind of general prejudice, and there is no *prima facie* general restriction on action, any more than there is a luxury to be in all situations *inactive*.

Further, conservative ethicists commonly accept the reasonableness and indeed the *imperative* of the human prerogative to combat diseases both exogenous and endogenous, through both exogenous and endogenous means. In absence of a clear reason why exogenous interventions in human lifespan are fundamentally, and relevantly different from endogenous ones, and why the decline which is definitive of senescence itself is distinct from its associated infirmities, a position which denies our prerogative to extend healthy life by endogenous means appears seriously inconsistent. Can some other definition of the 'natural' be defended which makes the case for this distinction? One relevant possibility is of course in the mode of meaning that refers to 'human nature'. I will deal with this aspect of the discourse further in section 2.6 below.

[135] Mill JS. and Millar A. Op. Cit. note 2
[136] D. Hume, Op. Cit. note 131.

2.5 The value of life to persons as substances, and the extreme subjectivist viewpoint

Before we embark upon an examination of a candidate for the concept of human "nature" which has been suggested as the possible grounding for a counterargument against the radical extension of human or personal life, it is important to clarify the groundwork upon which this conception of nature, in the form argued, depends. I suggest that the concept of "human nature" which underpins the arguments against life extension as outlined in the subsequent section, depends upon (a peculiarly Aristotelian) view of persons as *substances.*

Aristotle was the substance ontologist who arguably had the greatest influence upon the subsequent history of the status of substance in Western philosophy. In his Categories, he defines an ultimate substance as something which is neither "in" a subject, nor is that which may be "said of" a subject.[137] Rather a substance *is* the subject of such predications. By this he asserts that particular substances are the foundations upon which all other categories of existence are built, such that genus is dependent upon species which is dependent upon particularised exemplars of the species, such as *this* horse, or *that* man. Without any examples of the latter, there would be nothing of which the former categories could be said, and nothing in which they are instantiated. One cannot have the category of "horse" in the *complete* absence of any particular horse whatever for such a category would then pick out nothing in *particular*. In this way, it could be asserted that without such individuated substances, the other categories become meaningless. Indeed, by this negative criterion of substance (what is not a substance), he arrives at the category of particular living beings as that which he considers the *most* fundamental, and most archetypal of substance. So then, particular living beings are primary substances, or *prôtai ousiai*. In book Z of his *Metaphysics,* Aristotle asserts that the question of being resolves upon the question of substance, such that to ask "what is being?" is simply to ask

[137] Aristotle, Categories 2a10

"what is substance?"[138] In stating this he clearly marks substance as the ontologically prior archetype of being. All else depends upon it.

There is some tension between the Physics, the Categories, and the Metaphysics when it comes to the subtleties of the definitions of just exactly what it is that Aristotle means when he refers to particular living beings as substance. These tensions are a matter of longstanding and continuing scholarly debate, and a long discussion of them therefore lies outside the scope of this thesis. For present purposes, it will suffice to note that Aristotle considers that particular living beings are primary predicative subjects such that there is something simple and un-analysable about the statement that "there is a man". While he certainly accepts in the Categories that such substances can change in some way, such that they become hot or cold, pale or dark, good or bad, they nonetheless must be viewed as being substantial in the sense that such changes are secondary to their *essence*[139]. There appears in Aristotle to be a hierarchy of essences, such that secondary substances, such as species (so described in the Categories) are said to correspond to secondary essences, as stated in the Metaphysics.[140] In this way it is arguable that Aristotle indeed has an unchanging or changeless *essential* character in mind when he discusses species in general, but most especially the particular individual living organisms to which these species refer.

Modern commentators in the bioethical discourse who are of an Aristotelian view as concerns substantial form, or essence have often taken from this what amounts to an absolutist view of persons as substantial entities with unchanging and essentially timeless natures or essences. This amounts to the core of what I have called the "conservative" bioethical viewpoint, and it is consonant with views of the value of life as depending upon a particular frame of being, a substantial thingness upon which the category of being both human in general, and a *particular* humans depend, and from which they derive their "intrinsic" value. This unchanging, fixed or substantial essence is analogous with, or identical to the "frame of the gift" of life, upon which the sanctity, and therefore

[138] Aristotle, Metaphysics Z 1028b4
[139] Aristotle Metaphyisics Z.6
[140] Aristotle Metaphysics Z.4 1030a11-12

the value of that life, as personal life or life instantiated within the category of personhood, are said to depend. Consider the following from a recent paper by Patrick Lee on the subject of substantial identity:

> The comparison between voting rights and the right to life is relevant only if one assumes that all rights are of the same sort, which is simply not true. Some rights vary with respect to place, circumstances, and talents; other rights do not. We recognise that one's right to life does not vary with place, as does one's right to vote. …The basic right to life is the same as having *moral status at all*, that is, being the sort of entity that can have rights or entitlements to begin with. And so it is to be expected that *this* right would differ in further and more fundamental ways, from other rights, such as a right to vote. In particular, it is reasonable to expect that having moral status at all, as opposed to having a right to perform this or that type of action in this or that type of situation, should be based on the *type of thing* (or substantial entity) something is. And so, just as this right does not vary with respect to place or situation, so it does not accrue to someone because of an acquired skill or disposition. Rather this right belongs to a person, a substantial entity, at all times that she exists, not just during certain stages of her existence, or in certain circumstances, or in virtue of additional, accidental attributes. Thompson is right when she says that to show that something *now* has rights one must produce some fact about its present, not its future. But this is easily done. Right *now* the human embryo is an entity with the same *substantial nature* as, and so equal dignity with, you or me. The pro-life position is *not* that unborn human beings are potential persons and therefore have a right to life. Rather, potentiality is important only because it is an indicator of what *kind of thing* is already present. From conception on, the unborn human being is a developing substantial entity with the basic, natural capacities to reason and make free choices. She *right now* is that type of thing or substantial entity. And it is the type of thing that matters, not the condition that thing is in, which may or may not allow her immediately to exercise all of her basic capacities. [Emphases original.][141]

Now, it may be *prima facie* thought that what was being argued here is a kind of processual argument, such that a "thing" is interpretable as a "process" or the *character* of a process but this is not what is in fact meant, as is made clear by the use of the Aristotelian language of "accidental attributes" to describe the processual elements of the thing in question. Further it is asserted that:

[141] Lee P. The Pro-Life Argument from Substantial Identity. *Bioethics* 18;3 2004. pp249-63

> Human beings with brain damage still have the basic constitution oriented to developing the immediately exercisable capacity for such acts, which is why they are rightly recognised as human beings and persons. An organic defect may prevent them from ever (in this life) developing the capacities they do have in virtue of the kind of entity they are.[142]

It is key that this qualification encompasses "organic defects" which are fatal to the possibility of self-consciousness or similar but yet *nonetheless held not to alter the fundamental kind of being a "person" is*. This clearly distances such a view from any functionalist view that simply references the inherent potential of an organic process to develop into a functioning person, which is critiqued as being necessarily some conscious psychological process. However it is also important to recognise that it is not an appeal to the substance of the body, which crucially in this case is clearly damaged in important ways which themselves preclude the relevant psychological processes from manifesting. These views are echoed by like-minded ethicists throughout the literature, particularly those of religious persuasion as in this example from explicitly Catholic philosopher Peter Kreeft:

> How is a person to be defined? The crucial point for our argument is not which acts are to count as defining a person (is it speaking, or reasoning, or loving?) but the relation of these personal acts to the person-actor. Is a person one who is consciously performing personal acts? If so, people who are asleep are not people, and we may kill them. Is it one with a present capacity to perform personal acts? That would include sleepers, but not people in a coma. How about one with a history of performing personal acts? That would mean that a 17-year-old who was born in a coma 17 years ago and is just now coming out of it is not a person. Also, by this definition there can be no first personal act, no personal acts without a history of past personal acts. What about one with a future capacity for performing personal acts? That would mean that dying persons are not persons. Surely the correct answer is that a person is one with a natural, inherent capacity for performing personal acts. Why is one able to perform personal acts, under proper conditions? Only because one is a person. One grows into the ability to perform personal acts only because one already is the kind of thing that grows into the ability to perform personal acts, i.e. a person. [143]

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[142] Ibid. footnote p.262

[143] Kreeft P. 1997. "Human Personhood Begins at Conception." Catholic Education Resource Center. Available at: http://www.catholiceducation.org/articles/abortion/ab0004.html [Accessed January 2008]

Kreeft here subtly but clearly distances, without particular warrant, the processes of psychology and action from the person concerning whom a definition is sought. The function of this distancing is to secure the concept of a "substance" for what are otherwise best described in processual terms. But such distancing presupposes, of course, that there must be such a distance, and that the person must be in some sense separate from all of these things or processes. A person is conceived as a perduring entity who bears the relation of both author and subject of actions, intentions, and other psychological and physical states, but who is not *identical* to them, and whose identity is in no way fundamentally *composed* of them. But such an entity would be strange indeed, and its causal and subjective status seriously in question. After all, if it in itself does not change, how can it have any causal input into the processes we commonly associate with persons? In Kreeft's picture and similar ones, what we are left with amounts to an essentially *disconnected* essence. So disconnected is this essence, in its changelessness, indeed, that one might almost call it entirely empty, *insubstantial* even, for if it is thoroughly disconnected from all of the psychological and physical processes, properties, qualities, and states of a body and mind, or an embodied mind,[144] it is open to us to question what is left of the concept of a person? Kreeft himself explicitly references the idea of soul, as the candidate for this substantial form:

> …it must be said that "human being" is not a merely biological term because the reality it designates is not a merely biological reality, though it is a biological reality. To identify human beings and persons is not biologism; in fact, it is just the opposite: it is the implicit claim that persons, i.e., human beings, have a human biological body and a human spiritual soul; that human souls inhabit human bodies. The reason we should love, respect, and not kill humans is because they are persons, i.e., subjects, souls, "I's" made in the image of God Who is I AM. We revere the person, not the functioning; the doer, not the doing. If robots could do all that persons could do culturally, they would still not be persons. Mere machines cannot be persons. They may function as persons, but they do not understand that they do not have freedom, or free will to choose what they do. They obey their programming without free choice. They are artefacts, and artefacts are not persons. Persons are natural, not artificial. They develop from within (like fetuses!); artefacts are made from without.[145]

[144] As I would prefer, or even "bodied mind" to signify the lack of deep duality, though there might be some layeredness of emergent reality, as will be discussed later.
[145] Kreeft P. Op. Cit. note 143.

Now we see clearly that Kreeft accepts a trichotomy: human body, human psychology, human soul. It is the third of these that in his schema supplies the "substantial" part of personhood, as is likewise implicit in Lee's case, and in that of other Catholically-influenced or committed thinkers. Further, I hold that any position which appeals to a substantialist view of personhood must inevitably postulate, if not a soul per se, then some similar "thing" on which to hang the concept. But here is a major problem. What *work* does such a concept do in the idea of *personhood?* I will deal with the soul candidate first, and then move on to other possible candidates.

As regards souls, if persons may have either any psychology, or none at all (as must be the case to qualify these responses as candidates to establish the irrecoverably comatose or PVS patients, or indeed embryos, as persons), and if they may have any kind of body (whether severely brain damaged, or no) or *none at all*, as is suggested by the non-dependence of personhood *in itself* on the body with its ever shifting structures, fortunes, and predicates, but on a non-physical, non-biological perduring entity, then *how do persons interact with either psychology or the body?* Do any of the changes of the body or mind have any influence upon it? Does even the death of the body? If not, then of course we are confronted with a complete lack of explanation, from the "pro-life" position, for the "sanctity of life" position, since it is clearly held that this position *does in fact depend upon the criterion of the presence of personhood, which is identified with the "image" that is the frame of the gift of life!* If this substance is truly changeless, and in its essence independent of both psychology and body, then it appears not to be part of the causal reality of the physical world of the body/psychology, and consequently would appear to be irrelevant to the concept of death, *for it could not be subject to it in the ordinary sense of bodily death*. Of course, this is implicit in the concept of a "soul" but whence, then, the traction of the soul-derived concept of personhood, upon the value of the life of the body/psyche, from which it appears to be so logically disconnected? Worse, what indeed can it then mean for a changeless substance to be "alive"? Now Kreeft's language above suggests that he wants some causal relation to subsist between the soul and the body/mind. But if this is the case, what can that relation be? If, as is

suggested by the 'psychological person-function-bot' example he uses, this relation is one simply of adding "freedom of will" to the psychology, then how is it that the substance, changeless as it is, can itself "act" freely, or *actively initiate* such causal streams in the body and psychology? This suggests internal complexity, and capacity to interact with the physical processes of the body/mind, and so renders the *necessarily changeless and causally independent entity of the soul both causally dependent* (in the sense of being a part of the causal system in question) *and changeful,* destroying the very concept it is hoped this would support and rendering it identical with a concept of a causally interacting natural *process*. His assertion that persons are "natural" in this light is rather telling, for what in nature is an utterly changeless substance, and also causally efficient in the *active* sense that is implied by the notion of *freedom* of *will*? What can both participate in, and yet be wholly separate from, the causal economy of the natural universe? Souls are explicitly *supernatural* and the causal question is here fudged in a manner very much analogous to the fudging of Cartesian Dualism of mind and body. Also, what is the relation of the 'person-soul' to the zygote? Is it affected by the simplicity of the zygote? Can it exert "will" in an independently *intelligent* sense upon the development of the embryo? If it is asserted that the psychology and the soul are *independent* of one another, the former simply being a functional-process, but yet the latter *changeless*, what work does the soul do in the psychology? If this causal relation and internal changefulness is denied, then the presence or absence of the soul, in turn, *appears to have no effect whatever upon the processes or manifestations of the actual body, or the psychology* which is associated with that body and which emerges from that body's activities. There is no requirement (other than, perhaps, a wholly stipulative one) even that the soul's relation perdures through the bodily life of the being with which it is supposedly associated. But if this is so, then what is the soul, to the body, or the apparently psychologically-instantiated mind? What is this thinsubstantial "thin particular" (to borrow a phrase from D.M. Armstrong[146] though rather badly out of context, as the soul is unlikely to conform to his concept, which appears matter-dependent, though other ideas of "substantial personhood" may)? What remains of this

[146] Armstrong DM. 1978. Nominalism and Realism: Universals and Scientific Realism, vol.1. Cambridge University Press, Cambridge.

concept, which seems so disposable as to represent a very clear case of that which William of Ockham warned us against: nothing more than an "entity beyond necessity"? Nothing at all, I would suggest. John Locke had similar worries, and went so far as to suggest that a person's soul might be replaced without them even being aware of the change.[147]

Locke's attempt to rescue something of the concept of Aristotelian essence, at least insofar as this was a candidate for substantial identity, depended upon some other concept than the soul. He appears to have rejected the notion of a non-material essence in favour of a material candidate to ground his concept of substance, which then served to ground his categorisation of what he termed "sortals" or reidentifiable complex material bodies. His concept appears to have pointed at some material *substratum*, perhaps a complex of atoms, which provided the material basis for a continual, and non-processual substantial identity. He did not specify what this was to be, but merely speculated that there was some such thing, which might one day be known as the supplier or substantial identity. Despite this, he adopted what might be termed a conventionalist approach to the bodies of objects in general, noting that the conjunctions of bodily parts into a whole appeared largely a matter of convention, rather than true essence or substantial identity. So, the conjunction of these bricks into this or that house, or this or that pile, or bridge, appears mostly a matter of how we view them, and what their function is, to *us*. This partial scepticism led him to consider that living bodies are likely the best candidates for sortal status in terms of substantial identity,[148] since they do appear to manifest a unity that is in some sense necessary, and not simply arbitrary or conventional:

> That being then one plant which has such an organisation of parts in one coherent body, partaking of one common life, it continues to be the same plant as long as it partakes of the same life, though that life be communicated to new particles of matter vitally united to the living plant…[149] [150]

[147] Robinson H. 2004. "Substance." In: The Stanford Encyclopedia of Philosophy. Available at: http://plato.stanford.edu/entries/substance/ [Accessed January 2008]
[148] A position echoed (and thought novel by some) by Peter Van Inwagen, in his book Material Beings: Van Inwagen P. 1995. Material Beings. Cornell Paperbacks, New York, NY.
[149] Locke J. 2004. (f.p. 1689). Essay Concerning Human Understanding. Penguin Classics, London. Book II.XXVII.4 p298

In this way the most obvious modern candidate, for living bodies, for a Lockean substratum might be thought to be the individual genome. However, of course, there are numerous problems with this candidate. Firstly, it does not seem to guarantee the condition of unity. In the case of clonal colonies of plants, is a Mangrove swamp composed of many trees, or just one? Are bacteria each individuals, or else is a colony one individual? In the most relevant case for persons, identical twins share a single genome, but are non-identical *persons*. If one twin committed a murder, it would appear to matter *which* of them was punished, and we would not think that *both* must be punished in order that the crime be redressed. Also, of course, all my tissues (with the exception of red blood and hard bone) contain a functioning genome, there being trillions of them, and I do not commit mass-murder when deliberately scratching my arm, or amputating my toe. But more tellingly than this, I cannot survive without the bacteria and other organisms in my gut, and each have an utterly different genome to my own. It is often said that a human body comprises approximately 100 trillion cells, but it is less often noted that only around 10 trillion of these cells are possessed of a specifically human genome. The remainder are largely possessed of bacterial plasmid (rather than chromosomal) genomes. Even the cells are composites of historically separate genomes, as discovered and noted by Lynn Margulis,[151] with prokaryotic bacteria-like components in the form of mitochondria, each with its own genome, inhabiting a eukaryotic cellular body, with its separate, singular complement of chromosomally ordered genetic material, contained within the nucleus. Nor are all of these individual genomes in any sort of unchanging form either across generations, by chiasmata during sexual reproduction or other processes (in the case of the prokaryotes), or even within the lives of the individuals themselves. In the case of the prokaryotes this is most clear, from the process of Lateral Gene Transfer between them, by which genetic material is exchanged and shared. In the case of complex organisms such as humans, this instability is manifest in many ways, for example by chiasmata in the meiotic division of the sex-cells (surely still to be classed as

[150] It should be noted that both Van Inwagen and Locke's views, if simply adjusted to accept the ontological primacy of process over substance, at least in the case of living organisms, tend rather than to dispute, to support the core and general theses of this dissertation.
[151] Margulis L. 2003. Acquiring Genomes: A Theory of the Origins of Species. Basic Books. New York, NY.

"part of" the whole individual human while harboured within the system), or more pointedly by haphazard changes either by random mutations caused by radiation or chemical instability, or else more powerfully by the action of retroviruses, which build their own genome into the host's genome, thus permanently transforming it. These transformations may become hereditary, if they occur within the gametes, and it is currently considered that roughly 8% of the human genome is retrovirally derived,[152] though this may increase as our still nascent understanding of their evolutionary role deepens.[153] More generally, genome instability in individual somas is a well-established fact of life. Much of this instability is ongoingly managed or mitigated by self-repair mechanisms, but it is well understood, and germane to this thesis in particular, that imperfect repair mechanisms resulting in serious genomic instability is "a major stochastic mechanism of aging".[154]

It might be thought that this latter in itself, particularly in context of the overarching theme of this work, argued for a genetic candidate for a Lockean materialist substratum for living beings. But even aside from the swarm of candidates above there are a number of further serious problems with such a view. Firstly, it must be recognised that there is no single identifiable "master copy" of the genome at work in any multicellular organism. Even within the group of cells that share a parent genome, from, say, a zygote, (thus ignoring 90 percent of the cellular units in the human body, for example) there is no "master" genome copy persisting through time which serves as the ongoing prototype. Further, as development occurs, the genome, in terms of what it "means" to each cell, and to the body as a whole, changes. Cell differentiation ensures that different cellular genome examples have differing functional states of the genome, such that some genes are "on" and others "off". These expression-states, which are of course represented in physical differences, differ between cell types, and change across time within each cell. Further, damage to nucleic acids which precipitate the changes associated with aging is

[152] Belshaw R. et al. April 2004. "Long-term reinfection of the human genome by endogenous retroviruses." *Proc Natl Acad Scie USA* **101** (14): 4894-99
[153] Medstrand P. et al. 2005. "Impact of transposable elements on the evolution of mammalian gene regulation." *Cytgogenet Genome Res* 110 (1-4): 342-52
[154] Vijg J. October-November 2004. "Impact of genome instability on transcription regulation of aging and senescence." Mechanisms of Aging and Development. Volume 125, Issues 10-11, pp. 747-753

mostly of a harmful variety, whereas many of the changes to DNA within cell lines is non-harmful, and can be passed through the somatic cell lines, such that all of us, over time, turn out to have mosaic, rather than universally specific DNA identities. If the changes occur very early on in development, as well as further down the line, an individual may wind up with fairly widely divergent genomes across cell-lines, and so be a strongly mosaic genotype organism, without particular ill effect. Further still, the example of chimeric organisms, whose chimeric fusion happened in the early stages of development in the womb, provides a convincing *reductio ad absurdam* of any proposition that the identity of an organism, let alone the identity of *personhood*, depends upon the genome. So, a person with a chimeric genome is an organism resulting from the early-stage fusion of cell lines from two (or rarely perhaps more) *quite separate zygotes, each with its own individual genome*. If this occurs, the resulting person may end up with cells with genomes of literally 2 (or perhaps in rare cases, more) types, as divergent from one another as are those of ordinary brothers and sisters of the non-genetically-identical, separate birth, variety. The resulting chimera, however, functions normally with this admixture of cells with divergent DNA, and is usually indistinguishable in form and function from any other person. In one remarkable case, a woman named Karen Keegan, from Boston, suffering kidney failure, hoped that one of her three sons might be a match for a transplant. The subsequent tests appeared conclusively to show that while all three brothers were related fraternally, two of them were apparently not her sons at all. She was found to be profoundly chimeric, even producing genetically wholly distinct sets of gametes. Interestingly, the phenomenon of chimerism, once thought rare, may be surprisingly more common, according to some experts possibly affecting as much as 12 percent of the whole human population![155,156] Whatever the rate of incidence, it is, in my opinion a clear *reductio* for the idea of genomic substratum identity for persons. However, we are left with a fairly strong intuition that there must be *something* that can be said that leaves the *self*-identity of organisms as a viable concept. I think that there is,

[155] Wolinsky H. 2007. A mythical beast. Increased attention highlights the hidden wonders of chimeras. EMBO reports **8**, 3, 212-214

[156] When microchimerism is taken into account, this figure may well go up to 100% of the population: Nelson JL. Feb 2008. "Your cells are my cells." *Scientific American* Vol. 298, no.2 ; Adams KM, Nelson JL. 2004. "Microchimerism: An Investigative Frontier in Autoimmunity and Transplantation." JAMA Vol. 291, No. 9, pp. 1127-1131

and certain of the remaining subsections of Section Two and especially Section Three of this work will deal, among other things with the elucidation of just what this may amount to.[157]

Returning to the issue of a substance account of the value of life to persons, in view of the above failure of the best candidate for a particular physical substratum, and of the fact that cellular and other tissue turnover and flux in living bodies replaces, or changes the character of, essentially all of the physical material of the body in fairly rapid succession, it does not seem that we will find a plausible *physical* candidate for "substantial identity" of living organisms. As will be argued further below in the section on the value of life to persons as processes, the psychological case is even more clearly lacking in a "substance" identity.

But even if such a "thing" in the sense of perduring "substance" could indeed be found, would it somehow guarantee the value of life in any case? The value of life as held to be intrinsic in a *substantialist* mode has certain key features. Most saliently:

> ISV1: The value of life is held to be unitary and absolute, which means that it obtains entirely at all times that it is present at all, and is not subject to increment or degree.

This absolutist position on intrinsic value is what is referred to when it is argued to protect the human organism from zygote to grave, at every stage between and *regardless of any other facts whatever other than that the human organism is alive*. A number of consequences extend from this idea. Firstly, if it is thought that no other factor matters, then either we have an absolutist value of *all* living organisms, after the Jain mode, wherein there is moral equivalency across all life forms, or else there is some special further condition of humanity which confers special status upon even severe PVS patients wherein no functioning cortex remains, and zygotes. But this presents something of a dilemma. If all life is equally valuable in absolute terms, then we have an unworkable

[157] This will turn on an analysis of the thermodynamics and biodynamics of living as separate from non-living matter, and the processually transcendent stages which extend from and depend upon this remarkable phenomenon.

practical situation, and must reach the repugnant conclusion that we commit murder incessantly and on a truly monumental scale. Such a conclusion appears counterintuitive, counterproductive, and seems to leave something of literally supra-vital importance out of the picture.[158] If a further factor is postulated, this must needs be some additional aspect beyond the mere biology, and outside psychology. The most common candidate, as has been noted, is the "soul" made in the image of God. But the above arguments suggest that this is a very difficult and dubious, if not wholly unworkable candidate in its own right.

Even if such a value were somehow to be established, however, it would present a further, and I feel defeating, problem. This is that for such a value to obtain, it must obtain in whole, or not at all. Several things flow from this. Firstly, even if such a value could gain some traction in the context of an organism composed apparently entirely of physical biological and psychological *processes*, such that it might be attached to such an organism in a manner which protects the physical biological life of the organism (which I have already argued against), given its *absolute* nature, it must protect that life absolutely. In this way, it seems contrary to the definition to suggest that it simply fails as persons age towards death. Surely if it is unitary and non-incremental, and so obtains wholly at all points while the organism is alive, then it must protect the organism *without fail*, and we are driven to a conclusion that intervention in aging to prolong lifespan, and the prolongation of lifespan of whatever form, provided that it has such a substance-value, is an *absolute imperative*. It would appear that if any conservatives who accept a canonical position on the sanctity/intrinsic value of life in a substance mode seek to argue against radical life extension, they must explain why their view does not endorse or indeed command such action, though it purports to be, in an absolute sense, 'pro-life', or else they must accept that its fundamental function is not in fact an endorsement of life's continuance, but rather simply constitutes a denial of human prerogative.

[158] This will turn out to be a kind of supervenient or transcendent hierarchy of value extending from the basic definition of life, and incrementally *built* by the driver of the process itself,

Now this must be true, for *if the absolute value has any hold or traction at all on the requirement for prolongation,* meaning if the value can in fact represent a value of life's *continuance,* it must command such a continuance without fail. But can it do so at all? Does or can it have any such traction or any relation whatever to the value of life's continuance?

I would argue that it cannot.

This may seem to be a startling conclusion, but I think it is warranted by further analysis. The continuance of life must be a *temporal* phenomenon. The key criterion is of course *extension in time*. A value that guarantees such an extension must, therefore, have some factor that is equally time-involved, time-critical, time-relative, or time-dependent. Another way of putting this is that such a value must be time-*incremental*.[159] If the value is none of these, if it is truly *timeless*, then it fails to contain explanatory force for the assertion that *continuance in time* is what is important. A value of life that is absolutely timeless, therefore, appears to be applicable only to true (supernatural) immortals. But even for them, it would appear to be, in a sense, a content-less and superfluous value, for it would be redundant, since they *cannot* die. If such a value could somehow be said to obtain for mortal beings, it remains to be seen what it might mean to them. Can it provide an explanation for a time-incremental value? It would appear that it cannot, for a time-incremental value must tell us, for example, *why* or *how*, or at the very least say *something* about why it might be better to live a longer, rather than a shorter life. If a value is absolute, non-relative, and obtains in whole or not at all, it is fundamentally bivalent. A bivalent value of life, for sets of organisms that live respectively a single hour, a single day, a single year, a hundred years, or a thousand years, *must be exactly the same in all cases*. It exists at every moment of the life in question, and drops to nothing on death, *with no period of decrease*. This of course provides the further problem of the concept of the "moment" of death, for it does not appear that death is exactly a "momentary" thing. Death in itself, is a *process,* with cells, even brain cells, dying not

[159] I here adapt a concept from Dworkin, as described in his "Life's Dominion", of values as either absolute, or incremental. Dworkin R. 1993. Op. Cit. note 53. pp. 70, 73-4, 80

instantaneously, but *continuously* such that the organism's life diminishes towards a zero point, which is reached at different times by different tissues, neurons, and neuronal complexes. But the major issue here is that such a value apparently has no power to explain why living a further minute, hour, day, year, decade etc. would be *good*. It appears to yield a judgement that, provided an organism is mortal and will definitely die, *it does not matter how long the life is, qua the value itself, since it makes no difference whatever to that value, and the value can tell us nothing about the time-incremental value of the duration of the organism.* An absolutist substantial entity is importantly time-irrelevant, and an absolutist intrinsic value of life understood in substantialist terms must also be so. This is why block-universe theorists, following the Parmenidean logic whether consciously or not, are committed to the view that time is essentially illusory. To understand the value of life's *continuance*, therefore, we must search for a value more connected with time and therefore (necessarily time-incremental) *process*, which are themselves inseparable concepts. Time, for Heraclitus, was real, and the modern process philosopher Rescher holds as the first of his five basic propositions of process philosophy that: "Time and change are among the principal categories of metaphysical understanding".[160] I will propose a conception of value in subsequent subsections, which I argue entirely fills the role thus necessitated.

These observations provide some measure of explanation of what is wrong with Mary Ford's analysis in a recent paper, of the value of personhood providing an absolutist value. In this paper, she sets out what she considers to be the "personhood paradox", which is that for (she omits the term "liberal" but this is the kind she has in mind) personhood theories of value, persons must themselves be of "ultimate" value, but yet such theories, in lionising personhood, and especially the autonomy thereof, appear to self-defeat, since it is usually considered by proponents of such liberal versions of the theory that persons may decide voluntarily when their lives have ceased to have value. In this paper, Ford displays significant confusions between absolute and instrumentalist concepts of value, as can be seen by the following:

[160] Rescher N. 2000. Op. Cit. note 90. p.5

> If we accept that persons cannot exist outwith the context of their lives, then we can proceed to ask: what are the implications of the ultimate value of the *person* for the value of the *life* on which it depends for existence? I propose that if (as personhood theory claims) the person has ultimate *intrinsic* value, then the life of a person must have ultimate *instrumental* value, even if its intrinsic value is minimal. Thus, although the circumstances of living may be painful, difficult, unhappy or even miserable, the life itself must as a matter of logical consistency be of ultimate value if the person is of ultimate value. Unless personhood proponents accept this, they commit themselves to a scalar version of personhood in which 'person' is not an all-or-nothing category, but a spectrum, so that one individual may be more or less of a person than another.[161]

Her difficulty arises from the conflation of or illegitimate conjunction between absolutist, or substantialist conceptions of personhood, which specify an *absolute* intrinsicality and those which are instrumentalist, wherein value is strictly determined by the valuing agent themselves, as is pointed out by John Harris in a paper given in reply:

> Ford claims that '[t]he first contradiction can be summarised as follows: we can say that if a being possesses criteria x,y, and z, it is of ultimate value and deserves the utmost protection, yet simultaneously claim that we ought not to interfere if such a being wishes to destroy itself?'[162] Ford believes the answer to this rhetorical question is 'no'. She goes on to claim that this is a pitfall and that voluntary euthanasia cannot avoid this pitfall. However, one problem for Ford is that this is not the only way of avoiding the problem. Ford assumes, on no basis whatsoever, that the ultimate value, or moral status, equates to inviolability or equates to an obligation to persons to preserve their lives at all costs. Ford's account treats persons as if they were things and the obligation to them is not an obligation to a 'thinking intelligent being which has reason and reflection'[163] but simply to an instance of ultimate value. Ford treats the value of life as an inalienable right but offers no argument as to why this must be so.[164]

Here Harris is right on the money. Ford's assertion that "ultimate intrinsic" value, with its absolute substantialist overtones, confers a *necessary instrumental* value is without argument, and I would suggest is not capable of one. It is wholly stipulative and *ad hoc*. For reasons explored above, there is a thoroughgoing disconnect between what Harris

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[161] Ford M. Spring 2005. "The Personhood Paradox and the 'Right To Die'." *Medical Law Review*. 13, pp. 80-101
[162] Ford M. ibid p. 95
[163] Locke J. Op. Cit. note 149. Bk II, XXVII.
[164] Harris J. Autumn 2005. "The Right to Die Lives! There is no Personhood Paradox." *Medical Law Review,* 13, pp. 386-392

here correctly identifies as a "thing" substantialist view of perduring value, and the value of life's continuance to persons. Her proposition is therefore without merit, as far as her own argument for its basis is concerned, since there is none at all at the key point. Indeed, her confusion and lack of clear grasp at this point appears betrayed by her curious use of the phrase "even if the intrinsic value is minimal". This in itself appears flatly to contradict her own assertion that the value of life to persons *cannot be scalar* and so cannot be incremental in any way. It is rather explicitly absolute in a substance mode. Her hoped-for connection is therefore both unsupported, illegitimate and here flatly denied. Up to this point, Harris and I are in agreement. I do not, however, deny that there can be *any* connection between a conception of some intrinsic value of life, and a value of life to persons, but this relation demands an explanation which is not supplied. As this work progresses through section two I will attempt to supply such an explanatory relation. But the proposed candidate for intrinsic value I will suggest will turn out not to be of an absolute substantialist variety, but indeed is scalar, and fully connects to and explains the time-incremental nature of the value of life to persons as processes. We are getting ahead of ourselves, here, though, and must return to the question in hand. But there is one thing we can begin to say about it at this point, in context of the Harris paper, which distances my view from the Harris view, which latter I take to be a nicely clear exemplar of the generally accepted liberal view of *exclusively* agent-predicated value.[165] Harris goes on to assert:

> Ford identifies a second supposed contradiction which she characterises as 'the erroneous assumption of the conceptual separability of a subject and his or her life'[166] I do not believe that any of the accounts of personhood surveyed by Ford exhibit this defect or make this assumption. It is true that Dianne Pretty and others demonstrate their personhood by articulating their wish to die since … the very same set of capacities required for valuing existence are also required for disvaluing it. … She has failed to recognise that it is not *life* that is being valued, it is existence of a particular sort. Indeed, on many accounts of personhood, including that of myself, Singer, and others, persons need not be organic life forms at all. It would be possible for very sophisticated computers which are not alive in any sense to be persons, and the wrong of ending their existence would be

[165] Fan R. 2000. Can we have a general conception of personhood in bioethics? In: The Moral Status of Persons. Perspectives in Bioethics. Becker GK. (ed.) Rodopi, Amsterdam/Atlanta GA.
[166] Ford M. Op. Cit. note 161. p. 94

> the same as the wrong of ending the life of an organic person but not because they are alive. … Most personhood theorists, I think, treat personhood as a threshold. … On personhood theory the value of life can be taken to be the value of personhood and therefore the value of life separable from the personhood is zero. Most personhood theorists think that once personhood has disappeared (as in permanent vegetative state) or before it has arisen (as with the fetus and embryo), the life has no value; it is the personhood that is valuable, embodied, in the case of humans, in an organic living body but in the case of other possible forms which persons might take, not necessarily so embodied. Once we see that this is an issue of interests we can ask the question: what interest does this person have in continued existence? And if the answer is 'none' then their interest in living, or their right to life cannot be violated. Since these interests can include an interest in ceasing to exist, there is nothing paradoxical or inconsistent in recognising that it can be in the interests of a person to die and hence that killing can constitute respecting the personhood of individuals. In short, persons are creatures the value of whose existence is constituted by their interests and preferences. To think of the value of life as simply the value of maintaining an organic life form in the form which happens to be the life form of a person is simply to misunderstand what is being talked about when we talk about the value of life to persons.[167]

Three significant claims are made in this sequence:

HC1: The value of life to persons is wholly unconnected to any value of living for organisms insofar as there is neither a necessary nor a sufficient connection between these. So any value of life in itself is either non-existent, or if extant is purely incidental (or accidental, in Aristotelian terms) and irrelevant to the value that persons have for the continuance of their lives.

HC2: The value of life's continuance to persons is entirely self-dependent and of a second-order nature, such that it depends not on their status as persons, nor even upon their quotidian needs and basic desires, but solely upon their second order volitions (to put it in Frankfurt's terms).[168] In this way we may term it a "person-predicated" value as opposed to one necessarily as a predicate *of* persons.

[167] Harris J. Op. Cit. note 164. pp.389-390
[168] Frankfurt H. 1971. "Freedom of the Will and the Concept of a Person." *The Journal of Philosophy*, Vol. 68, No. 1, pp. 5-20

HC3: The status of persons as such signifies no value whatever except that which is instantiated in the *present*[169] conscious second-order preferences of the person who bears the status in question.

Now while I agree with some of Harris' critique of Ford, as well as its implicit critique of substantialist positions in general, the radical (rather "bootstrapping") subjectivism which it exemplifies is several steps too far, I feel, and further, is likely not to be supportable without any appeal to some more basic facts and theories of value-construction. In short, it is likely to be hoist by its own petard of oversimplification, for it appears to take too narrow a view of the realm of value, which appears rather arbitrarily isolated from the context in which it obtains in the world. Further, it exalts to what I will argue to be an implausible degree, the self-integrity and pure autonomy of second-order judgments, such that they not only supervene upon, but utterly transcend and are wholly separated from the processes which underlie them, and from which they arise. While it will be argued that persons do indeed transcend their originating processes, this transcendence will be shown to be incomplete, and the purely autonomous self-legislation which is hoped for in such an idealised picture of absolute transcendence will be shown to be an incorrect picture of reality for persons. Apart from anything else, it harbours no account of the apparent radical discontinuity in nature which affords this wholly separate category of being, and as such represents an *ad hoc* acceptance of such a discontinuity, which is at odds with the naturalistic monism argued for in this thesis. However, I will furnish an account of the nature D3 of Nature, further below, which will account for the *partial* discontinuity which is indeed manifest in persons, while preserving the deep categoric wholeness of nature writ large. In short, the value of life to persons will turn out to be not so wholly or exclusively dependent upon presently manifesting second-order volitions, to the extent that these volitions alone may empty the life of a person of all

[169] The emphasis upon the presentness of the conscious elements is part of what is hoped to be the force of the objections raised by Lee, Kreeft, and others from the supposed counterexamples of sleeping and unconscious persons. The naturalistic processualist account of personhood below, dependent upon the self-inherence of persons in the bodies of necessarily self-inherent organismic processes, given below, will answer this objection by elucidating the nature of the necessity of bodies, as well as the non-exclusivity of the *presentness* of persons.

value. Rather, something closer to the Ford intuitions will be described, but which offers explanatory force and demonstrated connectedness between the intrinsic value, which is better to be described as an *inherent* value, derived from the self-inherence of living beings themselves, and the value of the lives of persons *to themselves*,[170] as Harris hopes is wholly disconnected from this former concept of value, which he holds to be null and void. The value of life of organisms *simpliciter*, will therefore also be argued to obtain, and to be not only the originator, but a present and *continuous* (so, not *wholly* present-bound) underwriter as well as driver and informer of the value of the higher-order valuing activities themselves, which will be viewed as elaborations of, or deepening of the value of life simpliciter, as supplied by the thermodynamic arrow which builds organismic self-inherence. Further, the idea that persons are strictly psychological, and "non-physical" and that their existence depends *solely* upon present psychological events or potentials, such as the actualised capacity for memory (which extends from Locke, and what Laurence Locke has described as his "simplistic" view of the subject)[171], will be denied. I will argue that subjects' psychologies are not discontinuous with their bodies, and that persons are not wholly *present* at any one time, in a literal psychological sense. And further, that at any one time, the *total person* of *even* presently conscious persons is largely latent, unconscious, and non-psychologically, but rather physically present. This fact, that persons are partially conscious, but partially non-conscious beings, whose totality can only be described in processual terms extended across significant periods of time obviates the worry as to sleeping persons, though not necessarily as to that concerning PVS patients with severe brain-damage. In this way I deny every one of the claims HC1-HC3 above, and the elucidation of this denial will play out in subsequent subsections of this work, with what I hope will be important consequences for the increased compatibility with each other of the core intuitions of liberal and conservative bioethical theorists.

[170] Persons will be viewed in a Spinozistic mode of particularly or especially self-inherent examples of the self-inherent process-systems definitive of living organisms in general.
[171] Cf. Robinson H. 2004 Op. Cit. note 147.

2.6 Concepts of human nature and their implications for radical life extension

There is a mode of the 'natural' that is of relevance here. This has been referenced and discussed above and is best understood by reference to the notion of the 'normal'. In this mode, the hitherto *de facto* absolute frame of the human life span, as referenced by such statements as 'to have lived out his natural life', may be described as being simply what has been, and continues to be, *normally* the case. Indeed so universal and intractable has the maximum span been, on account of the stability of the biological predicates of lifespan within species, that it may be accounted to be not so much 'normal' as 'given', and in that sense to be the foundation of many expectations that have come to be reflected in and accommodated by our cultures, even to the extent of being able to be considered a primary shaping influence thereof. Insofar as this is true, radical life extension may have a profound effect upon the way we view our life span, in specifically *cultural* terms, which in turn might affect the mode in which we derive meaning from specifically *human* experience, and therefore, arguably, human nature. This issue is specifically raised in the influential and much referenced 'Ageless Bodies' report of the President's Council for Bioethics:

> Some proponents of age-retardation research use language that suggests an image of life as a 'time line,' uniform and homogeneous, rather than as a forward-moving drama, composing different acts or stages—infancy, childhood, adolescence, coming-of-age, adulthood, parenthood, ripeness, decline. This would imply an understanding of life as composed of interchangeable and essentially identical units of time, rather than composing a whole with a meaningful form of its own, its meaning derived in part from the stages of the life cycle and the fact that we live as links in the chain of generations… Life as lived in time may be more akin to a symphony, in which a certain temporal order—pacing and procession, meter and momentum—governs the relationship between the parts and the whole and, more important, gives a dynamic process its directed character. Lived time is also shaped by memories of those who came before, and of who we ourselves have been; it is informed by imagined future possibilities, created by our hopes and plans for what we might yet become. The animated shape of a whole life affects how we live every portion, and altering the shape of

> that whole might therefore have far greater consequences than merely giving us more time.[172]

What are the subtexts of the message as presented by the President's Council, exemplified by the passage above? It appears clear from the metaphor of the symphony, in context of the discipline imposed upon it by conventional limits as to length and structure, that what is being held as important is not structure *simpliciter* but rather a *particular* structure, since there is no warrant whatever to suppose that, once free of our presently absolute life span constraints, then lives as lived would have *no shape, no drama, no form, no meaning*! It seems that what is worried about is not that there will be no variation, drama, form, or meaning, but rather that absent this particular structure, the *present* meaning of 'human nature' will be fundamentally changed or lost. It appears clear that beyond the particular structure alluded to, the author finds it difficult to see that there *are*[173] or may be other worthwhile interpretations of 'human nature' that *presently* exist, or else will spontaneously arise. It is true that their form may appear alien to the worrier, or else be difficult to foresee, but is a claim that such different life structures are not, or would not be 'human' warranted? I will return to this question later but first I will seek to flesh out the conservative worry a bit further. It is important to try to understand the pedigree of this apparent prejudice. Consider the following, from Leon Kass:

> Or is it perhaps better that there be a shape to life, everything in its due season, the shape also written, as it were, into the wrinkles of our bodies that live it? … the 'lived time' of our natural lives has a trajectory and a shape, its meaning derived in part from the fact that we live as links in the chain of generations. For this reason, our flourishing as individuals might depend, in large measure, on the goodness of the natural human life cycle, roughly three multiples of a generation: a time of coming of age; a time of flourishing, ruling, and replacing of self; and a time of savoring and understanding, but still sufficiently and intimately linked to one's descendants to care about their future and to take a guiding, supporting, and cheering role. [174]

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[172] President's Council on Bioethics (PCBE) 2003: Op. Cit . note 97.
[173] The reason for the use of the present tense here will become clear later in the subsection.
[174] Kass LR. 2003. Op. Cit. note 24.

Here we encounter a clear example of the idea, referenced above in subsection 1.6 above, that the situation arising from natural *history* in the deep EEA in terms of our endogenous biology, must be expected to accord beautifully, as in a *pre-ordained harmony*, with our cultural adaptivity. This idea is, as argued in 1.6 above, patently trading on conflation and false assumption. Quite apart from this false picture of the relationships of our endogenous and cultural adaptivity, it appears clear that there is a powerful link in this line of argumentation between what *is,* in the sense of what just happens to be the case, and what is suggested *ought* to be the limitation of our prerogative to alter it, such that we *ought* not to interfere with or change certain 'given' arrangements. Consider this from Michael Sandel[175]:

> To acknowledge the giftedness of life is to recognize that our talents and powers are not wholly our own doing, nor even fully ours, despite the efforts we expend to develop and to exercise them. It is also to recognize that not everything in the world is open to any use we may desire or devise. An appreciation of the giftedness of life constrains the Promethean project and conduces to a certain humility. It is, in part, a religious sensibility. But its resonance reaches beyond religion.[176]

Which is explicitly endorsed by Kass:

> As a critique of the Promethean attitude of the enhancers, Sandel's suggestion is on target. For the manipulator, appreciating that the given world—including his natural powers to alter it—is not of his own making could induce an attitude of modesty, restraint, humility.[177]

These sentiments evince what I believe to be at the heart of this aspect of the case against specifically endogenous life span extension: what is objected to, once again, is specifically the expansion of human prerogative, or power of control, over our own

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[175] Michael Sandel is a (usually quite liberal) communitarian philosopher, but his stance on this issue has been described by Charles Krauthammer, during the 12th Sept. 2002 PCBE discussion of this paper, as 'a fairly radically conservative position' to which Sandel himself replied that it is not a 'thoroughgoing' conservative position, but I agree with Krauthammer that it is conservative in spirit nonetheless. Available at: http://www.bioethics.gov/transcripts/dec02/session4.html [Accessed January 2008].

[176] Sandel M. 2003. Op. Cit. note 25.

[177] Kass LR. 2003. Op. Cit. note 24.

destinies and predicates. But the worry as here expressed appears deeply flawed in at least two important respects, both concerning ideas of 'nature'.

Firstly, in a move previously referred to above in section 1 above, there is an apparent conflation of the notion of the 'ordained' in a religious sense - the idea that the world and nature was designed by an all-powerful creator - and the idea of nature as being that which is governed by the laws of physics, and has evolved through a combination of morally neutral stochastic events and the evolution of biological processes as moderated and shaped by natural selection. However, the two concepts of universal ontology are absolutely distinct. Biological nature, as evolved and purely physical has no apparent component of the 'ordained' whatsoever. Rather it is a sequence of frequently unstable and uncomfortable relationships which have a positive dialectic. The motivator or driver of this dialectic is a purely physically describable principle and will be further elucidated below. But the relationship between cultural and endogenous biological adaptivity is not simply a harmonius whole, pre-ordained in its "givenness" which we should seek to preserve simply on those terms, but is rather, unsurprisingly and once again, a partly harmonious, partly uncomfortable and tense interrelation, which is the subject of those same *kinds* of dialectical dynamic, and has an inherent potential for instability and therefore *change*. If it has a component which supplies an arrow of biological "value" providing the basis for value in a moral sense, as I believe it does,[178] there is nothing to suggest that this component is ordained in a *final causal* manner, or ordained at all in the sense intended by Abrahamic or other religionists. The particular structures that have arisen from the thermodynamic and biodynamic processes of life could just as well have not arisen at all, or else may have developed in some wholly other direction, such that no species that presently exists would then have existed. The arrow I will later discuss does not point to the existence of some *preordained set of particular species and individuals*. To suggest otherwise is to illegitimately conflate the physical aspect of nature with an *entirely separate* notion of supernatural ordination, in an attempt to perform an 'end run' around the purported problem of the naturalistic fallacy. If the naturalistic fallacy is to be resolved as an issue, as it must be in a committed natural-monistic schema such as that

[178] This will be further expanded in later subsections.

which I propose and accept, some argument that accounts for and accepts natural processes for what they are is necessary. In other words an argument which is *not* dependent upon some Deus Ex Machina device to solve the issue of ethical naturalism by *fiat* with no appeal to explanation or elucidation whatever, apart from that it all extends from outwith nature, as in Moore's "non-natural properties" or the will of a deity revealed in some ancient texts, but undetectable in nature by scientific or empirical means, and therefore wholly outwith the scientific accounts and naturalistic explanations of the world. These are not resolutions of the difficulty that Moore highlighted, so much as intellectual cop-outs. It should not be overlooked that the theological account, at least insofar as it accepts Biblical accounts, is very much committed to a static, non-processualist species essentialist account, wherein there were a certain set of animals and plants, created whole and at once. On such an account we may perhaps see where those who argue for substantial nature, and the sanctity of the "givenness" thereof, are coming from in their anxiety about alteration thereof. However this account is simply, and absolutely a false account of the natural history of the universe, biological and non-living alike. A conflation of an account which accepts ordination of a *particular set* of animals, plants, species, genera etc. or the inviolable, ordained givenness of a *particular* and *fixed* cultural-biological schema with that of the scientific account of dialectically evolving and self-organising natural processes is therefore badly wrongheaded, and should be discounted. There is evidence elsewhere in this same essay quoted above of Kass's commitments to the theological canon:

> The importance of human effort in human achievement is here properly acknowledged: the point is less the exertions of good character against hardship, but the manifestation of an alert and self-experiencing agent making his deeds flow intentionally from his willing, knowing, and embodied soul. [179]

If argument is made from a theological standpoint, that argument should be *explicitly* theological in nature or at least explicitly acknowledge its pedigree as such. In any case, the theological variant of the giftedness argument, being the sanctity of life based upon its "giftedness" from the divine, has been fairly thoroughly dealt with above. Elsewhere

[179] Kass LR. 2003. Op. Cit. note 24.

in the paper, Kass does seek to run a more or less secular version of the argument concerning human nature, from a 'natural kinds' standpoint:

> The word 'given' has two relevant meanings, the second of which Sandel's account omits: 'given', meaning 'bestowed as a gift', and 'given' (as in mathematical proofs), something 'granted', definitely fixed and specified. Most of the given bestowals of nature have their given species-specified natures: they are each and all of a given *sort*. Cockroaches and humans are equally bestowed but differently natured. To turn a man into a cockroach—as we don't need Kafka to show us—would be dehumanizing. To try to turn a man into more than a man might be so as well. We need more than generalized appreciation for nature's gifts. We need a particular regard and respect for the special gift that is our own given nature (and, by the way, also that of each of our fellow creatures).[180]

To the extent that the secular version of the approach to intrinsic value described above is indeed predicated on a combination of respect for particular cultural together with particular natural histories, it would appear that Kass is, consciously or not, endorsing a view of sanctity or 'intrinsic' value that seems indistinguishable from that proposed in Chapter 3 of the liberal philosopher Ronald Dworkin's monograph, Life's Dominion.[181] If so, although I would describe such a view as 'proto-conservative', it ultimately makes reference to the values of subjectively valuing persons, and not, as Hartogh[182] pointed out, to the *absolute* and *impersonal* classic conservative idea of 'intrinsic' human value. If what is here being argued is *not* analogous to a Dworkinian account, it will then be identifiable as a substance version of the account of "nature" as essence or character, as referred to above in D3. If so, it falls under the critiques applied above to substance accounts of identity, in this case simply one stage removed, and not of particular organisms or persons, but of species. As Aristotle, who held that these substance categories were of only secondary substantiality, realised, the substance account of categories becomes less defensible the more general it becomes. In any case, if an account of particular individuals in a species as substances fails, the more general account

[180] Kass LR. 2003. Op. Cit. note 1.
[181] Dworkin R. 1993. Op. Cit. note 53.
[182] Hartogh GD. 1997. "The Values of Life." *Bioethics* 11(1): 43-66.

will fail as well, since the necessary unity and changelessness of the substantial element will be called even more problematically into question.

I will not seek to deal at length with the idea of essential value of species from a *purely* biological view here, other than to suggest that, absent any reference to subjective states, or cultural values, even suspending reference to the naturalistic fallacy problem (or ad hoc solutions thereof), it seems difficult to see what is valuable about a particular genetic arrangement *alone*.

If one were to accept a "complete set of changeless species" substantialist approach, then what is the moral status of the HIV virus? Need we preserve smallpox simply because it once existed? Need we resurrect the dinosaurs? With human senescence in particular, to the extent that those who reach extreme old age may differ in some important biological, likely genetic, respects from the background population,[183] such a rigid substance-essentialist argument from nature D3 specifically in context of resistance to senescence might appear to involve a suggestion that such persons are, in some way, not fully human! If genetic structure alone is pointed at, does this mean that Down's Syndrome persons, who possess in their genome an entire extra chromosome, are not human? On a substantialist view, are they not *persons*? Of course, we may also remember the critiques of the genetic substratum account, given in the last subsection above. Also, there is something rather monomaniacal about this approach, which has a strong whiff of the *perfectionist* Aristotelian final causal approach to ontology. This will be further dealt with in subsection 2.10.6 below. For now, however, suffice to say that once again I reject such a substantialist viewpoint as simply representing an incorrect ontological commitment.

The processualist account of natural biological value given later in section two does not endorse a view of the value of absolutely *changeless* species, since it is a process-account, whose telos, if such there is, is very much open-ended. Indeed it rejects the idea

[183] Olshansky S. Jay. "On the biodemography of aging: a review essay." *Popul Dev Rev*: 1998; 24: 381-393.

that there absolutely are such things as species with a *substance essential* nature D3. Also, of course, the evolutionary account of species lies in accord with this process view, since all species that presently exist are descended from species now extinct, or else whose form or nature D3 their descendents have abandoned, and the species which do exist are constantly exploring the space of environmental possibility, and change, and are therefore necessarily open to react to change, and therefore are open to change *in themselves*. The existence of any one species, in the particular general form it now takes, which may be described in a processualist view of nature D3 as being its present *character*, does not depend upon changelessness, but rather upon changefulness and process from one general character to the next, with few very specific requirements other than the continuance of striving towards self-persistence. The very exigency of that striving itself necessitates change, for a wholly changeless, rigid species will soon become extinct (just as it will be seen that a wholly changeless organism is, at least, dead, and no longer an organism, so is impossible).[184] To see this we must merely ask whether the set of species that presently exists depended, for their existence, upon the extinction (by change) *within each respective line* of their ancestral *general* characters or *forms*? The answer is yes. They do so depend, at least if one looks at the genetic line, or germline of the species *itself*. It has become another and another and another, in a continual cascade of process. The bias towards seeing organisms as exemplified by their multicellular bodies (which are somatic series-organisms) rather than as germ-line series organisms, understandably enough derived from our never having encountered the concept of the germ-line until the last 150 years of our cultural history, may mean we focus a little overmuch on the view that organisms themselves do not change their form radically through time. If we look at the germline, we may see that it has a wholly processual nature D3, continually shifting to accommodate the changes in the environment that it encounters in the realm of the Red Queen.[185] [186]

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[184] Of course being a thoroughgoing processualist, I consider that even non-living "things" are processes, but there is a unique category of process which belongs to organisms, with further complexities and elaborations within this category, which definitively separates living from non-living processes, as shall be seen further below.

[185] Ridley M. 1995. The Red Queen: Sex and the Evolution of Human Nature. Penguin, London.

[186] Of course we do not need to go so far to demonstrate the absolute nature of process in organisms, but this is a good example, in any case.

I think it likely that the conservative arguments from nature D3 trade significantly on a conflation between the substantialist essence version of this concept, and the processualist character view. In the last quoted passage, it is made clear that what is worried about is a kind of loss of *essence*, specifically, in this case, of species, but elsewhere in the essay Kass shows that the worry also applies to the *essence* of human nature as *culturally* defined. With respect to the latter the line taken appears to be that we in fact do behave or lead our lives in some coherent, homogenous way as though we have a single, particular human nature or essence *that will be lost if only we extend our lifespan*. But is this a fair assessment of the *essential* in human nature? What of its character nature D3? One may characterise some aspects of the latter as "essential", being of vital or core importance, without accepting an Aristotelian sense of essential nature D3. Is this essential as in "core" or most importantly featured aspect of human nature really so fragile, so ephemeral and evanescent that even in the course of worrying about it the writers of the Ageless Bodies essay struggle to find terms to express what it is they are so worried we will lose? Is culture, ultimately, possessed of a substantialist essential nature D3? Surely if there were a pardigm case of a *processualist* nature D3 then it would be that of culture, whose true nature is one of constant process and adaptation. An attempt to define national cultural identity in substantialist terms, so, say "Englishness" through the ages is famously doomed. Culture is predicated by humans in their *characteristic* capacity as subjective valuing agents. At base the conservative substance view of culture appears to involve a lack of acceptance of the *essential* (as in most important) value of human persons as subjective valuing agents for whom it would be rational, and in line with the very most fundamental and definitive aspect of their nature to seek to extend their span of life, and therefore action and subjective experience, for *instrumental* reasons, quite apart from any *further* underwriting or valuing biodynamic drive towards individual or group self-persistence. To clarify the essential *importance* of this *characteristic* of humans as *persons*, one might turn the question around, and ask: *what would be left of the concept of human nature be if we were, as a whole species or class of being, entirely stripped of our status as subjective valuing agents*? The answer would appear clearly to be that our nature would be so different as to be impossible any

longer to define it as *human* in even the sense hoped for by the conservatives! In other words, the most important feature of humanity, as we commonly refer to it, is that humans are *persons*. This necessary condition for human *culture* may perhaps be accounted as at least approaching sufficient if consideration of the relation between eidetic valuing activity and culture is considered. Culture is, after all, *never complete*. It is rather, and absolutely, a process of *becoming*.

In this regard, the stance taken by the PCBE ignores some essential features of the way this *essentially*[187] human nature has created modernity itself. Although for many centuries it was indeed the case that cultural nonconformists could be punished by burning at the stake, it is no longer, and has not been for many decades, the case that all persons follow what might be called the 'Solomon Grundy' life trajectory. In aspects of religion, marriage, sexual orientation, imagination, art, philosophy, expressed and avowed belief, lifestyle, reproduction and a multiplicity of other areas, even participation in an unlimited, 'virtual' realm, millions of human persons already do live in a way that, for many, directly contravenes the very traditional values and frame of life that critics of aging intervention such as Leon Kass fear might be abandoned. To that extent, the game, so to speak, is already up. If this is so, following the spirit of the symphony metaphor, but translated to poetry, then the utter simplicity and uniformity of the child's rhyme of the life of Solomon Grundy may largely be a thing of the past, but the disciplines and strictures of short life imposed upon the enormous range of human aspiration, achievement, striving and engagement, of human *becoming*, while arguably good in some respects, forcing Sonnet-like strictness of form in *a few rare cases* may unfairly and unwarrantedly impose prohibitive strictures upon what lives, so to speak, might be *composed* should these be removed. What of those who are not 'natural' (D3) Sonneteers? What of those who live their short span in drudgery with little hope that they may escape within the scope of that short space? What of other, truly epic life-composers, cut short? What Aeneids and Odysseys would the guardians of the Sonnet-life have us discard or forgo? Further, if, as the secular, proto-conservative, Dworkin-like argument

[187] The word is here used, of course, to mean "of fundamental importance to character" rather than in a substantialist Aristotelian mode.

here appears to be suggesting, that appropriate lifespan is, in some deep sense, *culturally* predicated, could it not be argued, in these very terms, that given the enormous expansion and liberalisation of human culture in the past few centuries, human lifespan relative to the breadth of its cultural milieu has actually dramatically *shortened*? Consider the notion and ideal of a Renaissance Man. A person fully integrated with their cultural milieu was once at least *possible*. What hope now that a single person may within the scope of their lifetime understand or know all concerning even the single discipline of biology, let alone further and other realms of knowledge? The harsh and bitter rigours of the Procrustean lifespan cut us off, *increasingly*, from the possibility of integrated experience and understanding of our own created realm of culture and of knowledge. Is it an act of piety or humility towards the sacred in human culture as a projection and receptacle of human essence (in the sense of most vital or distinctive characteristics) to choose through brevity of span enforced by *voluntary* decay[188] to lose the ability properly to comprehend *our own created world*?

Further, the argument against radical life extension based on the secular, proto-conservative Dworkin-like intrinsic value of human life fails, since it does not respect what in its own view, as clarified above, must be humanity's own *most essential* feature. An argument, which seeks to use this processualist nature D3 as character basis *as if* it justified conclusions that are properly drawn from a substantialist view of nature D3, is an illegitimate conflation.

A residual and possibly serious concern remains, which is at the core of the worries about human nature canvassed in this subsection. This concern is well expressed by Robin Attfield:

> Without the concept of "nature" in the sense of the inherited (probably evolutionary) constitution or make-up of human beings, human nature and needs are liable to be treated as infinitely *flexible*, and thus as adjustable to the pattern

[188] If no act/omission distinction is allowed, this appears rather like a slow form of suicide or, in the mode of Montaigne that Kass has often referred to (e.g. Kass LR 2003 Op. Cit. note 1), with decay of senescence as a kind of macabre palliative similar to torture prior to execution: a terrible, slow euthanasia. This theme will be more fully explored in the final section of this thesis.

> intended by the local political authorities, and to be treated accordingly. (This point is due to Mary Midgley, in *Beast and Man: The Roots of Human Nature*[189]) But, as the late Geoffrey Warnock remarked, it is not good for people to be starved or tortured. Indeed Warnock went further: "That it is a bad thing to be tortured or starved, humiliated or hurt, is not an opinion: it is a fact. That it is better for people to be loved and attended to, rather than hated or neglected, is again a plain fact, not a matter of opinion".[190] Thus a robust concept of human nature turns out to be indispensable to sustain our rejection of unlimited human flexibility. [191]

It is fairly easy to see why a concern about the possibility of treating persons as infinitely flexible, or infinitely malleable, may drive a thinker towards the idea of nature D3 as substance. The process view of the world may, at first blush, seem to be a very unsettling one. After all, it is precisely the view that nothing ever is, in fact, *settled*. The rock hard certainties of "dry land" turn out to be fluid (easily seen simply with an expanded temporal perspective- the continents as boiling seas of geologic and biodynamic processes), there is no end to the sea of process, and no refuge from its waves and storms of change. However, the very fact that there is such an emphasis upon and common acceptance of substantialist ideas of nature, and ontology in general, suggest that we ought not to be so concerned as all that. After all, many of the processes do in fact manifest very significant stability over time,[192] and lack of possession of a fixed nature, or a *fixed* character does not amount to *characterlessness*, chaos, and *infinite* flexibility and malleability, any more than the universal boil of process is without logos. A concern that political powers may come to view human nature as excessively malleable should be mitigated by a realisation that the other view can be, and has been, just as terrifyingly misused. An insistence on a particular, substance view of human nature, such as may be manifest in the "Solomon Grundy" life referred to above, has many times led to the most serious abuses of humanity. One hardly need go so far as to invoke the monomaniacal absolute substance idealism of the Nazis, with their insistence upon a particular race who will be seen to behave in particular regimented form, to see why an idea of a fixed,

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[189] Midgley M. 1978. Beast and Man: The Roots of Human Nature. Hassocks, Sussex. e.g. at pp. 19-24 (Attfield's own reference see: Attfield R. 2006 Op. Cit. note 64.)
[190] Warnock G. 1967. Contemporary Moral Philosphy. Macmillan, London; St. Martin's Press, NY. p. 60 (Attfield's own reference see: Attfield R. 2006 Op. Cit. note 64.)
[191] Attfield R. 2006. Op. Cit. note 64.
[192] At least relative to other, more rapid and evanescent processes, such as the current human life trajectory.

substantialist view of human nature is both wrong and dangerous. Certainly fascism has at its heart just this kind of substance view of idealised human nature as a static goal, an ultimate end to which we must conform, or be "sub-human", but quite apart from twentieth century fascism history is shot through with such concepts, each one inevitably oppressive. From mediaeval notions of man as the instrument of God's purpose, who must conform to the dictates of the Church, or be expunged as heretical or heathen, to any number of tribal, civic, and imperial concepts of conformity to the ideal standard of human nature, with the divergent, less fit, or non-conformists banished, tortured, oppressed and killed, it is not difficult to find examples of the inherently oppressive nature of a substantialist concept of human nature D3. Indeed, Attfield seems hardly to notice that the very thing which he argues must be able to rescue humans from such oppression, a robust and highly particular concept of human nature, is just what it is that his "local political authorities" will *necessarily* be appealing to when they attempt to corral and stuff the wayward into line with such a vision! Indeed there is something suspect about the construction of this argument, since it appears to equivocate on the idea that there is such a fixed description at all. It at once states that there is, and ought to be, and at another time worries that authorities might misuse the idea that there *isn't* one, that character is infinitely flexible*, from the very basis of forcing conformity to just such a fixed idea of pattern!* Surely it cannot be that the "starving" and "torturing" is predicated on the basis that *this* is the pattern which "authorities" may have in mind, that human nature is *best conceived as being in accordance with* subjection to such practices! No torturer considers that it is in the best interests of the tortured to be so tortured, else this would defeat the very purpose of torture. Surely such practices are, as he does state, undertaken *precisely to force a particular concept of human nature upon a people, and necessarily with a fixed concept already in view!* No authorities would torture and kill in explicit reference to a *flexible* ideal of human nature, as a multiplicity of possible characters, without some fixed destination in mind, else there would be no point. What he is arguing against cannot be *simple sadism or wanton cruelty, or purely selfish aggression*, since these reference no particular concept of human nature, or if they do, precisely trade upon it in order deliberately to cause harm. Indeed, if an idea of human nature and character as *infinitely* flexible were held, then torture and coercion would be

pointless, since on that view humans might adapt to anything at all. Even the burning of Hell would become tolerable, and eventually unnoticeable to such infinitely flexible beings, since they would simply, given unlimited scope of time, adapt to its conditions. I would argue, therefore, that torture, cruelty, abuse, deliberate starvation for coercive purposes etc. are all tools, if used in reference to human nature at all, which are likely *primarily* to be used with a fixed or comparatively inflexible concept of human nature in mind. Against this backdrop, a concept of human nature D3 as a process of character is surely *less* likely to result in oppression. Provided it is understood that such natures are no more *infinitely* malleable than is the nature D3 of a river, or of the sun, then a process view of human nature as character will command, rather than oppression, respect for the individual characters of the many divergent manifestations of the central stream. In this way, we simply need *some* stability, in terms of the *character* of a process, to anchor nature D3 in the manner that Attfield wants, avoiding the Scylla of *infinite* flexibility but equally and at the same time avoiding the Charybdis of overly *rigid* conceptions of human nature, which latter are arguably far more oppressive and dangerous in any case. In the subsequent subsections I will be looking at the question, *inter alia,* of whether human nature must indeed, on a process view, be seen as *infinitely* flexible, and will conclude that, while *necessarily temporally open-ended and very flexible,* the flexibility of the character of persons viewed as processes is far from infinite, and indeed is far more fixed by exigencies of the totality of Nature, than is usually conceived on a liberal view. Apart from anything else, it will be argued below that the structure of persons has a certain *necessary* form and nature D3 which both allows *nearly* unlimited valuing activity, but which itself restricts that activity when it comes to the negation of the value of persons, even of persons *by their own selves*. In this way the autonomy of persons over themselves, and the predicates of their own personhood, will be seen to be far more restricted than on the radically autocratic view of the scope of personal autonomy, bolstered by such liberal ethicists as Harris, or such existentialists as Sartre.

The liberal value of choice, of human prerogative underwritten by a subjective and instrumental picture of life's value beckons us forward to the task of extending *healthy* personal lifespan. But a question remains: this value may *endorse* such action, but does it

command us to do so? This question relates to a central conservative worry, that has always prevented conservatives from accepting the liberal view: the worry that in any secular subjectivist schema the value of life remains, in a fundamental way, contingent upon subjective human ideas and decisions concerning value, and to that extent, no matter how stable in terms of cultural history, it is fundamentally *whimsical*, not absolute, and therefore dangerously undignified for so important a role. In this way, it is precisely the picture given in the liberal view of our *prerogative* to pick and choose among values, almost God-like, even among the most fundamental, and thereby to decide when life is valuable, and when it is not, that is objected to by conservatives. I believe that this concern is justified. There is a problem with the liberal view. It may be this very problem which itself drives conservatives to seek arcane universal underwriters of value. I will take up this issue in the following and subsequent subsections of Section Two, where I will propose an analysis of the liberal view of personhood that will provide, I hope, both a correct description of, and tractionable explanatory force for the *fundamental* and *intrinsic* value of the *continuance* of life to *persons*.

2.7 The subjectivist liberal view of personhood and the value of life

Liberal concepts of the value of life begin by asking the question: what is value? The answer, on the liberal view, is roughly that values are not part of the furniture of the universe in the matter that objects are.[193] Values have no objective ontological status, independent of subjective *valuers,* who are described as valuing agents. On the liberal interpretation of utilitarian ethics, for example, what is 'good' is defined with respect to the subjective preferences of valuing agents. It remains, therefore, to identify what are the basic requirements for a being to qualify for the status of 'valuing agent'. Essentially, these requirements are held to be that a valuing agent, at a minimum, must possess the following features: self-consciousness, or else an agent could not identify itself as the source of a value, nor could be capable of valuing its self, as distinguished from anything else; autonomy, or else a being could not be truly said to be an *agent* which is doing the valuing; and rationality, or else the agent cannot hold values to be distinguishable from one another, and reidentifiable as the values which that agent itself holds. Beings that possess these three features are generally considered, on the liberal view, to be persons.[194] This view has emerged broadly from a dialogue originating in the work of John Locke,[195] and modified by Kant[196] Which synthesis has become the accepted standard in the work of modern liberal ethicists. While other criteria have variously been suggested,[197] these key features form the core of the concept, common to virtually all such subjectivist accounts of personhood. Thus while all valuing agents are persons, not all humans are necessarily persons, and not all persons are necessarily human. Given these considerations, on the liberal view, the value of life is the value of life to *persons*, who construct this value, as with all values, *exclusively* by their activity as valuing agents.

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[193] Mackie JL. 1990. Op. Cit. note 36.
[194] See e.g. Fan R. 2000. Op. Cit. note 165; Ford M. 2005. Op. Cit. note 161.
[195] Locke J. Op. Cit. note 149.
[196] Cf. Ford M. 2005. Op. Cit. note 161.
[197] Ford M. 2005. Op. Cit. note 161.

2.8 Persons as processes

The classic liberal picture of value, based in the value of personhood, is incomplete. While it may be accepted that self-consciousness, autonomy and rationality are necessary for personhood, and for valuing activity *at the level of valuing agency* to take place, they are insufficient. There is a further requirement that has often been neglected: the requirement for *significant* extension of a person in *time.* Of course it may be accounted to be trivially true[198] that a being which possesses all of these three attributes but has *no* extension in time does not exist, is in fact not a *be*ing, and is therefore not a *real* person. But can a being which has these attributes and which exists for merely *some* time be accounted to be a person? Imagine a being with these attributes that exists for merely a nanosecond. It appears intuitively that such a being cannot be accounted to be a person. This is because what it is to be a person is not merely to be possessed of these attributes and to exist, but *also to use* these attributes to engage in valuing activity in the world. A being which cannot do so by virtue of having insufficient temporal *scope* cannot be accounted as fully *being* a valuing agent and is not, therefore, a person.

Nicholas Rescher characterises process in general in terms of its necessary temporality in the following terms:

> All processes have a developmental, forward-looking aspect. Each such process envisions some sector of the future and canalizes it into regions of possibility more restrained in range than would otherwise, in theory, be available. … Processes develop over time: any particular natural process combines existence in the present with tentacles that reach into the past and the future. Just as there can be no instantaneous vibration or drought, so there is no instantaneous process.[199]

[198] Though some constructions of atemporal or timeless substance-persons may perhaps be made to argue against this, these are of course disregarded here as they are oblique to the subjectivist analysis and in any case discounted by the primary thesis and supporting argumentation of this work.
[199] Rescher N. 2000 Op. Cit. note 90, p. 22.

It is instructive to re-read this statement replacing the word "process(es)" with that of "person(s)". The fit is exact. For a being to be accorded the dignity of personhood, they must possess sufficient scope in time to take part in the *process* of valuing. Thus personhood may be seen to be *necessarily a process*, rather than simply a particularised being in a categorical state who may or may not engage in processes, but is not and can never be touched by process at the core, as may be conceived on an account of persons as *substances.* This process of personhood is composed of desires, wishes, hopes, preferences, thoughts, plans, actions, experiences, emotions, memories etc. These and the *temporally extended* interchanges between them are both necessary for and *indivisible from* the valuing activity of a self-conscious agent, *and thus the existence of persons.* For without the constant interchange of future-directed elements of desiring, hoping for, wishing and planning, without the rational identification and shepherding of the objects of such desires into present experience, and the recollection of past mind-states, which in turn feed back into, sustain, and inform the future-directed aspects, then the valuing activity of self-aware agency would cease. In such a case, our autonomy would be meaningless, our consciousness empty and without object even of self, our rationality would be fixed, idle, and impotent, and our very subjectivity impossible. Rationality itself fundamentally involves *movement*[200] and the movement of rationality is *processual* in nature.[201] Autonomy without change is empty and meaningless. Self-consciousness *flows* from one object to the next, and the autonomous *proto*-rational[202] directedness of this *flow* is what constitutes the process of personhood. The valuing activity this particular sort of process predicates constitutes the subjective, *instrumental* valuation of *living* to persons.[203] So long as this process obtains, there is a person, and so long as a person obtains, *there is this process.*[204]

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[200] E.g. the movement from one concept to the next- the dialectic of thought.
[201] The fundamental driver of this rationality cannot be ultimately in the rationality itself, for this admits of a kind of bootstrapping circularity, as will be further discussed below.
[202] The reason for the proto- qualifier here will become clear in subsequent sections, when the absolute primacy of rationality will be argued against, in favour of the primacy of the flow, and its driver, itself, which builds rational structures processually, and secondarily.
[203] Horrobin S. 2005. "The ethics of Aging Intervention and Life Extension". In: Aging Interventions and Therapies. Rattan S. (ed.). World Scientific Publishers, Singapore.; Horrobin S. 2006. Op. Cit. note 119.
[204] Such a view may, at first blush, seem vulnerable to the sorts of "sleeping and unconscious persons" problems which Kreeft and others have posed. I do not accept that the account is vulnerable to these when fully iterated, and these will be dealt with further below.

2.9 The role of conation in the process of personhood, and the value of life extension

Consider the following passage from Bernard Williams, addressing the question of just what it is which makes the continuation of life valuable to persons:

> …[A] man might consider what lay before him, and decide whether he did or did not want to undergo it. If he does decide to undergo it, then some desire propels him on into the future, and *that* desire at least is not one that operates conditionally on being alive, since it itself resolves the question of whether he is going to be alive. He has an unconditional or (as I shall say) a *categorical* desire …It is not necessarily the prospect of pleasant times that create the motive against dying, but the existence of a categorical desire and categorical desire can drive through both the existence and the prospect of unpleasant times. [205]

I think that Williams is absolutely right in his characterisation of what he terms a "categoric desire", insofar as its capacity to "drive through" facts and circumstances of particular person's lives, to give a "motive against death", which must arise, of course, from the value of the extension of life created by this desire.

Consider the desiring for, wishing for, hoping for, and planning towards that form the obvious features in the landscape of valuing activity, and the movement towards whose subjectively underwritten objects form the obvious *instrumental* value of continuing to live. The affects, our attitudes of positivity and negativity manifest in our desires and wishes, approbations and disapprobations form the quasi-objective furniture of the non-cognitivist view of value,[206] while the rational *process* by which they are selected and secondarily discarded, resisted, or endorsed as considered concrete plans constitutes the construction of the value itself, according to neo-Kantian constructivists such as Korsgaard.[207] It is one or other of these kinds of purely subjectively-predicated and

[205] Williams B. 1972. "The Makropulos case: reflections on the tedium of immortality". In: Williams B. 1973. Problems of the Self. Cambridge University Press, Cambridge. pp. 86, 100.
[206] Blackburn S. 1985 and 2000 Op. Cit. note 32
[207] Korsgaard C.1996. The Sources of Normativity. Cambridge University Press, Cambridge.

endorsed desires, and most obviously the latter kind of second order endorsed desires,[208] which Williams appears to be putting forward as a possible candidate for the ascription of "categoric" desire,[209] in that the value of continuing to live, and thus continuing to be a person, (as I would have it) having the forward-directed motivation that drives the process of personhood towards the future, is suggested by this to be itself contingent upon a contingent object or set of objects of self-conscious, personal will. In this way, Williams appears to be agreeing with the idea subscribed to by Harris, that a person may subjectively legislate the value or otherwise of their own life's continuance. I do not, however, agree that each and every such desire is contingent upon *or initiated by, or necessarily sustained by* the choice of a person, as Williams here may broadly seem to suggest.

But how do such objects of self-conscious desire arise? Is any such object *in itself* as a particular desire necessary to the process of personhood? Are these particularised objects of affect or rationally-endorsed desires so exalted that a particular present set of them, *in themselves and however ad hoc this set might be*, can be said to constitute the *sole* and *total* value of the continuation of the process of persons? This last question may well turn out to be the most important one to ask of the kind view expressed by Harris, Williams, and more generally in the liberal conception of value to persons, and particularly in view of the assertions described above at HC1-HC3. For it is just such a set of values, or disavowals of value, that such a view must assert as constituting the sole arbiter of the value of their own continuance, to persons. This is especially acute in the presence of statements such as that noted by Ford of the Judge, who in a judgement asserted that even a wholly unreasoned disavowal of the value of a person's own life, by themselves, may be decisive in terms of this value.[210]

It does seem, *prima facie*, that such an account is going to be lacking in satisfying depth. After all, if a person suffers radical amnesia, such that they lose all memories of any such affects, desires, plans, or even who they are, does there exist an opportunity to kill them

[208] Analogous to what Frankfurt would call a "second order volition" Frankfurt H. 1971. Op. Cit. note 168.
[209] Williams B. 1972. Op. Cit. note 205.
[210] Ford M. 2005. Op. Cit. note 161.

with impunity? What of very young infants? Should a severely depressed person, who appears to themselves to feel very strongly, for a time, that they have no continuing interest in living, and at least for some period repudiates specifically all and any particular goals, life-plans, desires they may have had of any kind whatever, should such a person be accounted to have no residual value to or *in* themselves? For such a person, would all (non-interpersonally relative – so discounting values such as the value of the person in question *to* another) value whatever truly have disappeared? Can they justifiably or coherently legislate this, for *themselves* as a *total* person? Even if it could be considered coherent, could such an apparent legislation be *effective*?[211]

In short, can there be a value of life to persons *simpliciter*, and apart from any such list of particularised and subjectively endorsed values? In an even more extreme test, could such a basic value survive second-order subjective repudiation, alongside or as a bundle with all other specified values? In order to do so, such a value would need to be, in essence, a *nakedly prospective* value, since it could not be said to depend upon any extant particular objects of value such as simple affects or desires, or subjectively endorsed desires, such as life-plans. It would also need to be a *constitutive* value, such that the person simply cannot *be a person* in the absence of this value. If such a constitutive value is possible, may or must this depend upon some other, still more profound value of life, or is the latter rendered redundant?

To begin to answer the above questions, it is necessary first to ask: what is the *driver* of the subjectivity *itself* which then forms these objects of the affective component of our psychology, and of the cognitive rational process which selects amongst them? Further, is Williams' idea of the "categoric desire" which "drives through" the negative aspects of experience to underwrite the value of continuation in life, as being *in itself* a *subjectively-selected* and so *subjectively contingent* desire or some set thereof, the best picture we may have of such a desire? Is it even the ordinary picture that we do have, and which appears to us throughout our lives?

[211] As will be noted elsewhere, the capacity to kill oneself is not identical with, does not equate to the capacity to disvalue oneself, or rid the continuance of one's life of value.

Consider the following from Thomas Nagel, pondering the same question of the good of continued existence for persons:

> The situation is this: there are elements which, if added to one's experience, make life better; there are other elements which, if added to one's experience, make life worse. But what remains when these are set aside is not merely neutral: it is emphatically positive. Therefore life is worth living even when the bad elements of experience are plentiful, and the good ones too meager to outweigh the bad ones on their own. The additional positive weight is supplied by existence itself…[212]

This seems right. But this, however intuitively right-seeming, is also mysterious. Here, Nagel is quite explicitly denying that the positivity can be fundamentally dependent upon particular subjective goods or desires. But how can "mere existence" be positive in some sense? I agree with Nagel, that there is such a non-contingent positivity, but disagree with Williams to the extent that I assert that such a positivity can be considered to represent a kind of *non-contingent* categoric desire, such that the mere continuance of the *person* represents fulfilment of this desire.[213] In what follows, I will attempt to set out the groundwork for explanation of the naked positivity argued for by Nagel, which may also be characterised at the same time as a naked *prospectivity*, since it is intrinsically future-directed.

It seems to me that Williams might have accepted my disagreement, to some extent. Later in the same essay quoted above, discussing the gap between his account of the value of life's continuance and that of Nagel, he himself appeared to acknowledge that further analysis would perhaps discover a more stable and less overtly subjective (perhaps even non-subjective) basis for the origin and persistence of such life-affirming, categoric desires:

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[212] Nagel T. 1970. "Death". In: Nagel T. 1979 Mortal Questions. Cambridge University Press, Cambridge. pp. 9-10.

[213] It should be noted that in this sense, the "desire" represented, identified with nisus and conatus, is not of a subjective sort, but is basic, and profound. It is, then, a kind of *person originating desire*. I may be accused, perhaps, of equivocating on the meaning of "desire", but at the extreme originating leading-edge, it seems to me that the meaning of this term may in fact turn out to be rather *legitimately* equivocal, for perhaps obvious reasons.

> The difference is that the reasons which a man would have for avoiding death are, on the present account, grounded in desires – categorical desires – which he has… Nagel, however, … does not see the misfortune that befalls a man who dies as necessarily grounded in the issue of what desires or sorts of desires he had … In fact, further and deeper thought about this sort of question seems likely to fill up the gap between the two sorts of argument; it is hard to believe, for one thing, that the supposed contingent fact that people have categorical desires can really be as contingent as all that.[214]

Now, the solution to the problem of contingency that Williams points to may perhaps not extend to the rejection or abstracting away from talk of all and any sorts of "desires", but may rather extend from a re-evaluation of the origin of desiring itself. So what is missing, to fill in the picture? What is missing, I propose, is the conception of persons as future-directed *processes*, *whose process must be driven continually by something*, some motivating principle, or nisus. This principle or nisus I identify as and with the conative aspect in our psychology. It is this fundamental future-oriented proto-desire, this fundamental driver of striving, this forward-directed motivating principle, this conation, that drives the process and processes of personhood, all other considerations and values aside. It is ontologically *prior*, and must be so, to all contingent objects of either affective, or second-order rationally endorsed desire.

Indeed it is *from* the conative that particular desires arise at all, for without the fundamental, and *constitutive* aspect of the process of personhood that this represents, there would be no motivation for any desire to form, or to come into defined being as an object in the affect, much less the cognition. The original motivating component of the *formation* of desire is conation itself. Further, since without the driving of conation the process itself would cease, there would be no person to form desires, at all, and in any case, without such *prior* motivation, *iterated* desires would never arise from their most primitive psychological forebears.

But this fundamental conation is not open for negation by an action of the personal will, or some overriding desire, nor even by the architecture and machinery of rational

[214] Williams B. 1972. Op. Cit. note 205. pp 87-88

concepts. This is because the will is itself conative, and any desire that seeks to direct it, is driven and underwritten by the conative, and in any case must locate within an originating person, who would not exist without the conatively-driven process by which they are constituted. The rational process which might seek to deny it, in the sense of causing its surcease, cannot hope actually to do so, for it is itself motivated by this ontologically prior stream, this basic processual driver.[215]

What "puzzles the will"[216] about death is not, to deny Hamlet, that there may be continuance of the person in "what dreams may come" beyond death, but rather that there may *not* be continuance at all. Puzzling of the will is a beautifully precise way of describing our quandary when attempting to conceive of our *own* deaths. When thinking about one's own extinction, the attempt to imagine it results, involuntarily, in an attempt to "see beyond", to think of blackness, say, or of another world in which the process continues, but falsely or paradoxically, perhaps, merely contemplating its own non-existence. What the will balks at is the cessation of personhood, and why it does so is that personhood is an intrinsically future-driven open-ended process. We cannot conceive of its surcease within ourselves, because for us, while we conceive of anything, both ourselves and our conception itself flow inexorably and *involuntarily* towards the future, our thoughts and musings themselves spun into being in its stream, in turn modifying the flow into new eddies, swirls and concepts, shaping its flow into the crystals of apprehended and conceived objects of desire, but the conception itself is never, can never be the deep originator, never the fountainhead of the primal desire, never the progenitor and transitive sustainer of the stream *itself*. The value of *living,* then, is a subjective instrumental *as well* as a non-subjective (in the sense of the subjectivity of *persons* as opposed to more primal conceptions of subjectivity, such as that of Jonas, described further below) categoric value, as this latter is the facilitator, the instrument of the coming-to-be, the neverending (while a person) becoming of the process of being a person. In this way the compound value is an *inalienable* value for *persons*. That a person might state, and even believe that they have, and will have, no further instrumental value

[215] Except, of course, by a gun to the head or similar but this will be seen to be irrelevant to this value, and so is no true exception, as will be discussed in the subsequent subsection on suicide at 2.9.1 below.
[216] Shakespeare W. 1601. Hamlet. Act III, Scene i.

in continuing to live, and even that they may feel that they can wholly repudiate what values they do have, is based, I believe, upon a mistaken concept of the origination of such values at all, *as well as* the mistaken assumption that the total person is present at any one self-conscious point in time. The person who claims thus is doing so on the basis that they, as present self-conscious persons, are the sole and complete predicators and arbiters of the all of the values that they have. But if true at all, this is only very weakly or partly true, for the values we do have, based upon our affects, are *not* built, nor ended, by our self-conscious decision or fiat. Can we *decide* to like tennis, or a particular person, or asparagus, or working? Do we decide what sexual preferences we have, or do we *discover* these same? If we decide, may we then, for example, decide chiefly to desire brunettes with an athletic physique one week, and the next, overweight blondes? Can we decide to *cease* to enjoy, to value, or to love, or even that we have so ceased, qua our "total person", including the person we *will be* in a week, a year, a decade? How about *choosing, at the outset of a two-year cycle,* one year primarily to enjoy mathematics, and the next, *instead* of mathematics (which will be *genuinely* disliked, from the first day of that year) monster truck racing? These cases ought to strike the reader as absurd, and indeed they are so. We may *try* to change our affects in this way, and we may perhaps eventually be successful, through prolonged effort of will and exposure to some new influence or other, or removal from some old, but we are not easily capable of doing so. If we were, then punishments would likely not be very effective, since we could simply and easily *decide* to enjoy them. Or faced with the prospect of unforeseen imminent death, we could simply switch off or negate *all* of our categoric desire for continuance, and it would be as nothing to us (I of course *ex hypothesi* account this *complete* negation actually impossible). This suggests that the affects, and preferences which are the basis, for the most part, for our personal instrumental values, are not in fact originated, built, or negated by fiat of the self-conscious supremo of the present self, but rather *arise to* the self, from some more basic stream, themselves motivated into being by some more basic internal motivator- the conatus, and perhaps, if they pass away, do so by the same means, being washed away by the stream of becoming. But it is not that our preferences and affects, or the plans that extend therefrom, nor indeed our characters, remain fixed and changeless through life. Rather these are often quite remarkably changeful, and new

affects, preferences, and desires seem readily to appear, predominantly without being called into being in any rational or self-conscious manner whatever. If the foregoing is true, then it is simply a false conceit at any particular time to suppose that one has no *further* instrumental value qua oneself, and further it is equally false to suppose that one may by some fiat *ordain* that this state of affairs shall obtain at all, let alone *continue indefinitely*. If all (or even some) of our affects, and more iterated instrumental values (in turn giving rise to the likes of life plans) have their origin in a stream which is more profound than the level of the self-conscious person, and if that stream is constitutive of our being persons at all, it would seem that quite apart from and in addition to the value of this driver, the primal categoric desire itself, supplying the positivity of continuance *simpliciter,* there is *never a point at which it is true to declare that one's life will have no further instrumental value, qua oneself.* Now of course, as shall be further dealt with in subsection 2.9.1 below, it is true that one may be in the process of being burned at the stake, and in view of this, it may appear safe to contradict the foregoing, but even this is not as obvious as it may at first appear, and is rather more complex, such that the contingent circumstances *do not impinge upon the categoric value,* as we shall see below. Indeed the suffering of the contingent circumstance of being burned at the stake is to a large degree (in particular in the apprehension of approaching annihilation, but secondarily, likely also in the originating functions of the negative sensations themselves) predicated upon the inalienability of this value, as suggested above. In the subsequent subsection also, we will further explore the concept of the "total person", as opposed to the merely "present self-conscious person", which will better allow us to examine questions such as the supposed possibility of the self-negation of instrumental personal value.

So long as there is a person, then, there is the forward-directed value of the driver of conation, which represents a *constitutive* forward-directed categoric desire, supplying the basic *positivity* and *prospectivity* of continued life. This basic desire, this driver itself gives rise to further more iterated affects and rational desires, and the two together represent a compound value of life's continuance to persons. Neither aspect of this

compound value may be separated from the other, as they are, qua the *person*, *co-dependent*.

Let us examine the situation a bit more fully with regard to the value of life's *continuance*. The present and backward-directed elements of the process of being a person, such as experience and memory, have *necessary* forward-looking counterparts: hopes, desires plans, etc. Hoping, desiring, and planning are intrinsically future-directed. Hoping for, desiring, or planning our past is meaningless or futile. Without the constant interchange between the future, present and past elements of the process of being a person we should be fixed, and frozen, ourselves objectified and unable to fulfil, or even possess, an autonomous *will*, much less formulate rational values, designs and desires, let alone actualise them. Our rationality could not exist, for it would sit idle, no movement between concepts possible, for a desire to use it even to analyse the past, is a desire that extends towards the future, and needs the forward directed process to exist at all. Our autonomy would be stripped of meaning. The process of formation of affect and second order valuing and thus being a person would cease, and the *continuance* of being be without source or root, for its driver, the categoric value, must be supposed to have failed to manifest. Indeed the consequences described above would result directly from a failure of the categoric desire, the psychological driver that is the conatus, to provide the force of the flow. Should we lose this future-directed element of ourselves, then, we would no longer be persons, *and living would have no personal value*. Further, the desire for future goods is *driven* by the forward-looking categorical desire, *and is not contingent upon there being particular goods which are presently identified by a person.* These particular, subjectively identified and endorsed goods arise, as has been said, at least *semi-*spontaneously, as the flow of the psychology, driven by its conative aspect, pours out over the world of experience, or rather flows into the very existence of that world. It is a false view to conceive of such particular subjective goods or values as arising from affect or deliberation as *prior* to this flow. They are first and foremost the objects *of* the flow, arising within it, and crystallising into the objects of affect, attention, consideration, and secondary endorsement or denial. The very difficulty, and frequent impossibility of this rationally predicated second-order denial's having any effect upon the affective desire

towards these objects shows the profundity of their relationship with our pre-personal selves. But even as they rise from the flow, through the affects, eventually to receive the exaltation of subjective second-order *endorsement*, they rise by the activity of the flow of basic desire itself, which drives the very processes of the affects and the exaltation of cognitive endorsement *themselves*. In this way, all possible categoric desires of the higher-order, strictly subjective kind which supply exclusively instrumental value to life's continuance arise from the stream of the most basic categorical desire of the conatus, which in turn drives the very processes of affect, cognition, and rational choice. The fundamental future-directed element of the process of personhood, the root categorical desire represented by the inseparable conative aspect, *presupposes the continuation of a person into the future in the ceaseless process of becoming*.

In this way, it would appear that there can be no arbitrary upper limit on the good of the extension of life to a person. There is no point at which being a person does not involve the future-directed elements and their involvement in the process of interchange with the present and past elements. An attempt to set or discover such a general limit would appear to involve a misunderstanding of the nature of the process itself. That we may know some facts about human biology, which suggest that we indeed have an end in store, and even how far in the future that end is likely to be, in no way impinges upon the intrinsic nature of the future-directed elements that are fundamental to the process of being a person. These point toward the ever-distant horizon of the possible, irrespective of the actual personal circumstances, such as, say, a terminal disease.

If no general limit can be arbitrarily set or discovered, could one be set by a person upon themselves? That my desires, hopes and plans may fix upon particular objectives does not in itself suggest that I can easily, or at all, fix these elements of myself purely upon and contained within some set of particular objectives, such that the basic categorical desire itself can be somehow brought to an end upon the completion of this set. No matter what I specifically plan for, desire, or hope for, it seems that the conative aspect of my psychology overflows the limits of these particular objects without any particular second-order act of will on my part, and indeed, in *defiance* of one. So, *willing* these aspects of

ourselves to be contained within a fixed, time-limited framework would seem to be impossible. I may seek rationally to direct or curtail the objects of my first-order desires and affects (those that simply " I desire") with my second-order desires or volitions (those by which "I desire that I do or do not desire"),[217] but that a second-order desire to have *no* desires should be effective would seem impossibly self-defeating. For such a desire *is itself a future-directed desire*, and so arises from the inalienable categoric conation which is the fundamental driver of the process that itself enables the autonomous will to exist. We cannot *effectively* will ourselves not to be a person, while also being one, since that will *itself requires us to be a person*.

It is instructive to try to imagine a person setting a particular date beyond which she will be free of all desires. Such a picture strikes one as absurd. Further, if it is acknowledged that a person, in any particular moment of the extended process of their personhood, is rarely or never presently conscious of *all* the particular desires they themselves possess, much less the general and categoric desire that gives rise to them, as silently pervasive as gravity, this observation becomes greatly stronger. So it does not seem reasonable that a person may even set a limit to the good of *their own* future extension in time. On this view, then, there is no point in time at which the continuation of a person's life may be said not to be valuable, since these forward-directed elements are necessary to the process of being a person, as no particular set of contingent concepts, desires, or endorsements ever can be. And as such, the process of being a person is continuously open-ended. It is a process of becoming, not one of *arriving*. The cognition no more owns the total set of possible ends and values of a person, than it owns the very motivator of process which brings it into being at all.

Given the above considerations, we should look very sceptically indeed at the kinds of assertion made in HC1-HC3 that a particular, contingently *present* set, or absence thereof, of particularised subjective desires should constitute *the whole value* of life's continuance to the person-process. These seem rather incidental to a true assessment of that value. They may augment it, to be sure, but can they really *negate* it? They are

[217] Frankfurt, H., 1982 Op. Cit. note 168

products of the flow of the person-process, but they do not themselves constitute it, and in order for themselves to deny the value of this process itself, they must somehow be said to negate that value as a *prospective positivity* entirely. In terms of the instrumental aspect of the compound value, such a negation would essentially represent a choosing, by *fiat, of one particular present set of values, endorsements or negations, as being the ultimate set of all possible such sets*. But upon what basis of appeal would or could such a fiat be made? As persons process through their lives, as they move forward in time, they hold differing sets of values, endorsements and negations at differing times, sometimes more, sometimes fewer or less urgent, sometimes frivolous, sometimes deeply serious, but always in *process*. The particular values and desires held *at any one time is never*, therefore, *ultimately definitive of the total person.* To consider it so is to make an unwarranted and *ad hoc* ascription of *substance* to this particular moment in the process of personhood. Any particular set will themselves process, weaken and pass piecemeal by, and may become utterly replaced. The only constant is the continuity process of the person themselves, driven by the conatus. What authority should one particular present set hold over the *totality* of the person-process? Any such authority must appeal to some substantialist view of the person, such that the person may be *wholly present at one particular time*. I deny that this view of the person matches reality in any manner at all. In effect, this negation would amount to a denial of not just the values as presently held, but of all possible values which may arise from the stream. It amounts, therefore, to a category error of persons, for how can a singular moment in the process in referring to the objects briefly and contingently present in and predicated by that process constitute the basis for legislation upon the totality of the process itself. How can a particular set of presently held objects or conceptions of desire legislate the value of the nearly infinite possible set, towards and through which a person is, as purely a prospectively driven open-ended process, never-endingly moving in their becoming? For the single set to legislate the whole, the person must already have ceased to be a process, having *arrived at* the final set within which they are wholly continent, and beyond which they can no longer move or *become*. But since a person is *only* a process, and since as long as the person obtains the *process of being* a person, which is always a *becoming,* obtains, this *cannot* occur.

Further, since the endorsement of such a denial itself is a product of that stream, it cannot extend to an effective denial of the value of the driver of the stream. To deny the value of the conatus is to use the conatus, in its role of psychological master driver of the rationality, to deny the value of itself, and as such is quite literally wholly self-defeating, as it is to deny the value of *all future* contingent, subjective desires, and at the same time represents the denial of the value even of the rational process which is driven by it in attempting such legislation. It represents the starkest possible denial of *all possible value*. But such a denial itself must stand upon some value, must point towards some value, else it is utterly nihilistic. Whence, and with what meaning, the *desire* to deny *all* desires? What can be rationally made of the intention to end *all* intentions? Whence the value of extinguishing value? Such a move is utterly self-defeating. No appeal can be made to the idea that "it is only this particular set" of intentions and desires etc. which is being extinguished, on the basis that it is only *one person* in question, since *ex hypothesi* that person is a potentially infinite series of such attitudes, intentions, and desires. In this way, the *absolute* self-legislation of utter self-negation is *hardly different, if different at all, from the legislation between and across other living selves or persons*.[218] One is reminded, though for rather other reasons, of Sartre's words that a decision made for the self, is a decision made *for all mankind*.

It might, at this point, be objected that first-order desires of the basic kind here referred to, however pervasive and commanding, cannot of themselves rise to the level of normativity. I admit that the precise manner in which such a normativity obtains is likely to be problematic, or at least require further consideration. Some of the considerations argued above of the entanglement of "higher order" desires and values, and their dependence relation on this basic one, should go a long way to establishing the necessary relation. Equally, it should be acknowledged that any *naturalistic* account of the *beginnings* of normativity within a person will involve some borderline case, or grey area, and indeed this is what we should surely *expect*. Indeed, any naturalistic explanation

[218] This may be seen to be bolstered by Parfit's conception of a series-person, wherein, even during ordinary lifespan, we are psychologically continuous, but psychologically disconnected with at least some of our past selves. See subsection 3.1 below.

of the *origin* of value within nature should not assume or "smuggle in" the explanandum to its premises or initial descriptions. Only a panpsychist or similar system which holds that moral value inheres in the basic material of the world *simpliciter* would be devoid of the requirement to describe the point at which values arise, from components free of value. That which I propose is not such a system.[219] Some proposals for the means by which this value arises, or at least the likely candidates for the necessary structures and physical principles which are coincident with its appearance, will be given in subsequent subsections. Meanwhile, it should be recognised that the case of the drive for personal continuation is indeed isomorphic with perhaps the most pervasive and universally recognised moral imperative throughout history and culture: do not kill. Of course constructivists will point to the pragmatic social aspects of this universality. But is it the case that there are no related internal motivations as well? While the connection between the normative value "pro-life" and against murder or suicide with the fundamental conative drive of personhood as process which comprises the categorical desire spoken of here may seem questionable to some, it must surely be acknowledged that it is at least both plausible, and isomorphic in terms of the former being corollaries of the latter. Further, if it is right that this drive gives rise and motion to all desires, and itself motivates rationality, in the process of personhood, then it is the motivational underwriter of all and any value, including the second-order desires held by some to be exclusively normative. In this way, it might be called, humorously, the "mother of all values". And such a value is to be expected to be singularly powerful, and uniquely motivating. In this way, I suggest that this underlying, ubiquitous, and therefore often overlooked, underwriter and co-generator of the value of life's continuance is far more akin to the "ordinary picture of life's value" which we intuitively perceive as being something which must be both very powerful, pervasive, and very stable, than is some value derived entirely from a second-order endorsement of some further and subsidiary, rationally-constructed object of desire. It need hardly be noted that, whatever else their philosophic or religious convictions, when suddenly confronted with the prospect of imminent death

[219] Alfred North Whitehead's thoroughly processualist system is just this, however. In this, and other related ways, Whitehead's system is profoundly divergent from what is being argued for in this thesis.

(however sotto-voce it has previously appeared on account of its very ubiquity) there are few indeed, if any, who would not feel the drive and force of this value, most keenly.

2.9.1 Of suicide, euthanasia and sleeping persons: the comparative unimportance of present conscious persons and the inalienable nature of the value of life's continuance to persons

The reader may well have already made many connections between the foregoing and the questions of suicide and of euthanasia. After all, HC1-HC3 were made in specific reference to questions concerning the propriety of euthanasia, and it is not difficult to see the relevance of the above analysis generally to such questions. Some specific notes about the implications for these of my analysis of persons will be useful, however. I consider that the observations of the foregoing subsection provide a powerful ethical rationale against the morality of suicide. Very simply put, they explain exactly why the suicide commits murder against themselves. Those who consider that we *own* ourselves in any particular moment may consider suicide to be perfectly moral. But we do not, I argue, *ever in any particular moment* own our *total* selves, since the "we" that must necessarily be referred to in this sentence, must be the set of conceptions, values, rationales, desires, negations, affects etc. of which we are presently aware and which therefore compose only our *present self-conscious* selves. A view which holds this set to be the *total self,* despite Harris' protestations to the contrary (though he is perhaps unlikely to have encountered an adequately iterated process concept of persons), takes a substantialist concept of the self as its model, and reifies the affects, present concepts, and current objects of desire or denial of that substance-person to be representative of the total person. Such an understanding, is common enough, and indeed *assumed* by such human conventions as, for example, contract law.[220] As has been argued, a correct understanding of persons will view them as processes of ceaseless *becoming*. On such an account, it is impossible to conceive of the *total self* being present in a moment. Just as

[220] Wherein a mere signature can be taken as token for the reified total person-substance at once, such that this one decision may legislate for, in some cases, all time. Of course, some of this is heuristic, in that we *must* accept persons' decisions as their own, if anything like a contract, or indeed a promise, is to be taken seriously, and I accept the heuristic provided it is understood to be one. However, the contract of a self-fired bullet through the brain has consequences of an altogether more serious nature. In these cases, no heuristic account of the actual presence of the "total self" should be accepted.

no process is instantaneous, and persons are not in any manner *substances*, there is no point at which the total self obtains, that it may pass legislative judgement of ontological denial upon the values or existence of all of the person-self-process of which the instance in question is merely a brief slice, a flickering, changeable manifestation. Consider the following story:

> A child grows up dreaming, frequently and persistently, of becoming a pilot, of learning to fly. Various difficulties intervene, his parents break up, he has brushes with the law, and soon he is on his way down, past a couple of bad relationships, to the gutter. He ends up homeless and addicted to various drugs. Years pass and for many days, months, and years he forgets he has any desires whatever apart from the wanton first-order compulsions to further booze and get high, further to lose himself. He drifts this way through his late twenties, thirties and forties, during which time he frequently feels despair, and attempts to kill himself on several occasions. By pure chance (if such there is!), he does not succeed, and the physical demands his body makes each day drive him into continuing existence. Eventually, through the help of a charity, he manages to wean himself off the addictions, and finds himself living in sheltered accommodation in the country near a private airfield. He gets a menial job at the airfield, and becomes acquainted with the owner. At this point, in his early fifties, having utterly forgotten it for decades, and repudiated all desires and even his life, attempting suicide, he begins to remember that once, many many years before, as a child he had a desire, an overwhelming dream, to learn to fly. He discovers that this desire is not in fact extinguished. He talks to the owner of the airfield about this remembered dream, and the owner, remembering his own boyish motivations, which led him eventually to his present position in life, offers to give our hero lessons. The experience of learning to fly, for this man, becomes an overwhelming transformation, and he experiences it absolutely as the fulfilment of his own boyish dream. He finds himself competent, and before long he is working as a flight instructor himself, well content in his life and happier than he ever thought he might be.

The above story does not need to be true to be relevant here. It only needs to be *plausible* to us as persons ourselves. If plausible, as I consider it eminently so to be, it vividly illustrates the point I am attempting to make about the lack of *presence* of the *total self*, in the moment, from which we might hope to legislate for that total self. Had this story ended halfway along, or at any one of the points in his thirties and forties that this unfortunate had comprehensively resolved to take his own life, then it would have been a very sad tale indeed. Crucially, we may have been tempted to accept that his denial of any remaining value in his life, was true. But it need not have been, and in the *fuller* case was not. We may further stipulate that these decisions to self-annihilation were made not while drunk or intoxicated, but during periods of recovery, when not so befuddled, as is often the case in reality.[221] One may easily recast the story to make such a stipulation stronger, such that the person in question was not a substance abuser, but merely chronically depressed, or in the grip of some religious convictions because of which he was convinced that suicide was the required – and desired – course of action, or any such similar. We will deal with a case, the "Makropulos" case, further below, which will address the issue of whether a *much* further continued story might not or must end rather badly again, solely in virtue of its great length. But for now the crucial point is that it is clear to see that, for this man, and for *any other suicide or attempted suicide*, the legislation of death, of a defeat of all personal value of their own selves, is at least founded upon a mistaken conception of what it is to be a person, and as such constitutes murder upon the self who is killed. To see this is so, we need only enquire of the pilot instructor, of whether he is glad that his earlier self had not killed his *total* self. Even if the story had never had such an ending, the outcome is the same, for it is impossible for the partial self of any one moment, so dim and fragmentary, and so present-bound as it is, to have more than the most imperfect knowledge not only of events, *but of its own total complement of desires.* For it is easy to believe that, as I shall stipulate, during the darkest, most despairing times, when our hero wished to enforce legislation for his total self with a knife or by other means, he was *unaware* that he still harboured the desire to fly. If this seems far-fetched, we need only introspect for a few minutes concerning all

[221] Fadem B. 2003. Behavioural Science in Medicine. Lippincott Williams & Wilkins, USA. pp. 216-218

the desires we might have, and not have any *present* awareness of. Plans, goals, desires, these overlapping chains of projected being which bind up the compound self of the total person continually being added to in becoming, are present chiefly in our *unconscious* selves. They may be called to mind deliberately, or else present themselves to our introspection, though it is difficult to see how they could do so in *totality*. But even should they present, in whole or part, the manner of that presentation is deeply coloured by the affects of the present, and these garments projected on these aspects of our own selves, by the *present* conscious partial-self, disguise and alter the appearance of the deep, process-chain we are viewing, without *necessarily* altering its true manifold character. How many times have we in anger, despair, sorrow, or similar passion of the affect, with seemingly perfect reasons ready to hand, sometimes passionately and confidently, even imperiously expressed, done or said things, enacted repudiations of our previous desires or plans, or damaged things or processes or relationships we have ourselves painstakingly constructed, only later, and sometimes much later, coming profoundly to regret these same actions. The imperious self-destroyer, the hegemon-judge of the proud, even if rational, *present* self is not less real, but is only a *partial* self, and part of a chain of self-becoming, whose totality is unavailable even to the clearest-minded partial self, such that no self-legislation enacting the denial the total self can *ever* be a moral action.

An interesting adjunct to this is that I consider it extremely unlikely that anyone does in fact commit suicide with the spirit of complete nihilism. As I hinted at above, it seems difficult conceive of the holding of a value which disvalues all and any value, the holding of a strong desire that there should be no desires at all. If there was no drive towards self-becoming, if there were no person, there would be no action. True suffering requires passion that is thwarted in some way. A truly empty person, a person who really does have nothing more to gain, and nothing left to lose, would in many ways have ceased to be a person. The process of becoming would have ended, and they would have no *motivation to pick up the gun.* A truly undesiring person could not commit suicide. But there is more than this. Even self-loathing is an emotion which has in its view some better world, some desire towards a better circumstance, or a better mode of being. A person in

despair is likely always in despair in view of some other idea they have of not being in despair. In this way, suicide is also a mistake in another way. It is a failure to understand the nature of one's own true motivations even as they drive one towards the action of self-slaughter.

So much, at present, for suicide. But what of euthanasia? I do not, though it may surprise, consider euthanasia to be forbidden. I think Mary Ford is wrong about this. I have already denied her conception of personhood as the ultimate value, unargued and quasi-substantialist as it appears. However I have gone a long way, I feel, to rebuilding the solidity and dignity of that value in ways thoroughly grounded in the tradition which itself built the kind of concept she appeals to. But I do not think that this rebuilt conception of personhood mandates that we shall never kill ourselves *under any circumstances.* Here what McMahan calls the "problem of specifying the antecedent"[222] is relevant. This problem arises in cases where, to use Joel Feinberg's language, there is an "overdetermination of causation". Suppose John is shot and killed by Robert. If that is all we are allowed to know, it may be clear what caused John's death- a bullet, fired from Robert's gun. We may perhaps be moved condemn Robert as a murderer. Suppose we are told now that directly after killing John, Robert uses his gun to kill himself. We might now be moved, on the above grounds, to consider him also a murderer of himself. However, despite the apparently clear-cut facts, it may be reasonable to argue that Robert caused *neither* death. How?

Suppose we are given some further information, widening the causal picture just a little. We are told that John and Robert are both on a ship, which is a sailing craft made entirely of wood. It is the early 19th century, prior to the age of the telegraph, and the ship carries no special signalling equipment such as rocket flares. The ship is part of an expedition to the far Antarctic south, and is at least a thousand miles from any other known or likely shipping. The ship has caught fire, and at the moment of our tale is burning fast and beyond hope of recovery. The sole small craft aboard is already destroyed by fire. It is daylight, and clear to the horizon, such that a sailor may know that even in the wildly

[222] McMahan J. 1988. "Death and the Value of Life". *Ethics*, Volume 99, Issue 1. pp.32-61.

unlikely case of there being another ship just beyond the horizon, it could not arrive in time to save anyone aboard from the fate of either burning, or freezing to death in the water. Both men are very experienced sailors in cold water, and know that, although death in the icy water will be fairly quick, it will be in many ways every bit as agonisingly painful as the alternative of death by burning. John and Robert are facing either imminent immolation, or imminent plunge to their deaths in freezing water, or perhaps both. John has asked Robert to kill him. Robert, he knows, has a pistol. Robert obliges, shooting John in the head, and immediately afterwards, kills himself. Moments later both bodies begin to burn.

Do we now feel that Robert was the cause of either death? Certainly, his action of pulling the trigger was a fairly *proximate cause*, and the bullet's passage through the brains of each man, the ultimate proximate cause of their deaths. But what was the *transitive* cause? What was the antecedent cause? One may say it was the decision each had to join the ship at all. One may say that it was any number of factors that led to the uncontrollable fire, etc. We have a problem of specifying the true antecedent cause of the death of these men. Our task here is not, however, to argue for or against determinism, or any other such thing. It is to examine the judgement that the men made in asking to be euthanised, and in deciding to commit suicide, a case of self-euthanasia.

The crucial question to ask is: in making the decision to shoot, *did either of the men deny, or seek to deny the value of the continuance of their own or each other's persons through time?* Plainly, the answer is: no. None of the transitive causes leading to Robert's actions in pulling the trigger need have involved at any point any decision to disvalue or to cease to value the continuance of the lives of John and Robert. The unfortunate men, just as do many unfortunates in life, and eventually us all, simply found themselves in a situation of causal overdetermination towards death. *Whatever* they did or did not do, they would imminently die. This resolves, and therefore *removes and makes irrelevant* the question of the non-continuation of their selves. They did not, and in no way sought to legislate any denial of their own value. They simply rationally legislated, for the only self which would exist at any point between, to move the timing of their inevitable death forward

momentarily to avoid bitter agonies *the experience of which would not in any case prevent, but rather would predicate that death.* The legislation is wholly valid and consistent, for it refers only to the wholly present partial self, *which is all the self that remains available to them as conscious beings.* Therefore, euthanasia is a legitimate, moral, rational choice in an overdetermined situation. The rejection of the value of self-persistence as a sole end in itself is an evil apart from all else in that it entails the rejection of all other values, in addition. In this way it is a rejection of value *in totam*. This may be seen by the universal legislation principle employed both by Kant and Sartre, as mentioned above, in the latter case. However, a decision to self-euthanise, or endorse such action is not necessarily a decision against self-persistence, since the question of self-persistence in the situation in which the agent finds themselves is already resolved. They will not self-persist, and that death is imminent. They do not, thereby, make a choice *against* continuing to live as a person, or at all, since this choice is not in any case theirs to make. They make a choice against continuing to undergo experiences that in themselves both deny them the opportunity for other kinds of value, and which experiences themselves *constitute part of their own dying process*. It is fallacious to argue that they kill themselves. They are already being killed, and are *presently* engaged in the process of being killed. Therefore they may at one and the same time rationally choose to live, but realise that that choice is already denied them, since they will not continue to live, and so with perfect rational compatibility with the former choice, decide to enact their deaths earlier in the process of its unfolding, rather than later.

In his earlier discussed reply to Ford, Harris asserts of those who choose euthanasia:

> Although the person who is then killed remains a person with a valuable life its value being recognised as the set of interests that the characteristics of personhood make possible and which death fulfils. [Footnoted text]… [Main text] Since these interests can include an interest in ceasing to exist, there is nothing paradoxical or inconsistent in recognising that it can be in the interests of a person to die and hence that killing can constitute respecting the personhood of individuals.[223]

[223] Harris J. 2005. Op. Cit. note 164. p. 390

I of course deny this entirely as a false picture of what is going on in cases of euthanasia. The victim of incurable cancer or other disease, or inevitable subject of imminent painful death who chooses euthanasia is patently not *choosing death* as the true end of their *interests as a person*. Here Harris is completely wrong. That person is choosing to live, but in view of valuing positive goods, ones which they are rewarded by their physiology for *precisely because they accord with the value of the conatus towards self-preservation*,[224] and in view of the denial of these goods, and the only remaining experiences being those of punishment by their physiology *in view of the causes of the pain being ones which tend against the conatus to self-preservation*, they choose not to undergo the latter, since it is in vain and cannot lead to its own purpose but only ends in death, which suffering and death is all that remains to them in any case. This is crucial because such a person is not, as Harris asserts they are, even *capable* of emptying the value of their total selves (or in the case of the categoric desire of the conatus even their present self) from their own person-process. In this way, we escape the "personhood paradox" which Mary Ford was worried might exist in such cases, while at the same time accounting for personhood in a rich manner which adds explanatory force for her assertion concerning the robustness of the value of personal life.

How might the above observations and analyses relate to the cases, so often posited against the liberal view of the value of persons by conservative substantialists, of sleeping, unconscious, and comatose persons? Such views do indeed have bite against those liberal theories of personhood which, like that expressed by Harris[225] excessively focus upon and vaunt the *present* psychology of self-conscious persons as the *sine qua non* of their existence. As earlier intimated, this latter kind of view is quasi-substantialist

[224] This refers of course to the physiological feedback mechanism of pain and pleasure, which mechanisms, contrary to both hedonism and the idea that pain in itself is always an evil, are evolved tools of the homeostatic processes of self-preservation. One need only consider leprosy in order to understand clearly that this is true, even for advanced human persons. However, there are circumstances wherein pain does become a purely negative response, and those circumstances are precisely those of present causal overdetermination towards death, since pain in such a circumstance cannot in any case tend to the preservation of the individual.

[225] Originally: Harris J. 1985. Op. Cit. note 115. pp. 7-27. But perhaps more obviously, since the enactment of the capacity to *disvalue* life depends upon being *presently* conscious of such a desire to disvalue, which would purport resolve all and any such value for all possible states of the individual: Harris J. 2005. Op. Cit. note 164.

in nature, for it seeks to hold in its view *at once* and as a *unity* the whole person. A quasi-substance view such as this, but simply and wholly based in conscious psychology, is of course vulnerable to precisely the objection that, during periods of unconsciousness, such a person *ceases altogether to be*. Hume himself made this very objection in denying true personal identity.[226] But such an attempt simply mistakes what a person in fact is. I can go along with Hume, and indeed Parfit (as I shall discuss in Section Three below), on the rejection of the identity criterion for personhood, since identity in the deep sense of requiring that which is *identical* is not something which can be said to obtain on a process view. However, a view which holds that the present psychology is not only what is most important to persons, but what indeed is both necessary *and sufficient*, is vulnerable to the objection that this leaves the unconscious as importantly non-persons. A view, however, which relinquishes the stipulation that present psychology is so sufficient will not be so vulnerable. A view of persons necessarily as processes, necessarily will relinquish this stipulation, since a person *must be a process spread across many states in time*. A brief introspection should establish that we are not presently conscious, let alone *self-conscious* of much which must qualify as aspects of our persons. Further, much of what we might unreflectively account *actually to be* our present selves is not, in fact, manifest in our present psychology. Next time you speak, for example, consider whether you consciously pre-manifest the language you use. Are you *aware* of your search through your total lexicon, of your construction of sentences, of the actuation of your muscles and control of your breathing which allows your speech? Are you even more than very dimly aware of *just what it is you are about to say*? Is speech not frequently, indeed habitually, or nearly constantly a process which arises from the subconscious, or the unconscious self, and is *merely observed by the present self-consciousness?* What of all the present projects, desires, plans etc. even of the wholly quotidian local kind (that which spans, say, only the projects, desires and plans of one week, or a collection of hours in a single day)? Are these present in whole at any point? An attempt to present them to ourselves in this manner, *in totam*,[227] wherein they appear whole as a set in our presently self-conscious psychology is a task which may perhaps not be impossible, but which would require *a*

[226] Hume D. 1990 (f.p.1740) Op. Cit. note 28. Book I, Part IV, Section VI (p. 252).
[227] In totam here referring only to the total sum of the present conscious self. It is of course held that it is completely impossible to present the total sum of the self as a process through time, so the *total self*.

special and highly unusual effort of will, akin to that required in juggling. Thus it seems that even what we would ordinarily, and in a sloppy, hand-waving or gesturing way, refer to as our present selves, is largely a matter of actually non-conscious processes. Such a view is not a problem for a truly processualist account of the person. It is, rather, anticipated by it. So, the process of persons, on this view, becomes largely a matter of non-conscious, subconscious, or unconscious processes, and the presence or absence of consciousness becomes neither *wholly* necessary (at any one time) nor wholly sufficient for persons to obtain. On this view, all that need obtain *at all times* is the constant, ceaseless *motivator* of persons, the constant, ever-present *conatus*, which indeed drives our psychology, our *psychophysiological process*, *but also drives our unconscious physical, non-conscious simply neurophysiological processes, and all our other bodily processes*. Consciousness is not necessary to the conatus. The conatus may build consciousness, may drive our neurophysiology into psychophysiological states for example in the process of waking up, but it is present, and keeping our persons in process sotto-voce of the conscious self which arises from it. In this way, we find no mystery in the fact that we wake up at all. And this is much more commonsensical and ordinary in terms of intuition than one might suppose. After all, *I* wake up, *I* do not return to being after having been woken up by some unconscious impulse. The rise to consciousness, complete with *ongoing* psychological processes, is a daily, but often ignored phenomenon, worthy of attention. How many times have we gone to sleep, worried about getting up at a particular time, earlier than usual, and found that we rise to consciousness moments *before* the alarm-clock goes off? How many times have we gone to sleep exhausted, worrying over some rational problem, lacking understanding of its intricacies, only to find, on waking, and often clearest in the earliest stages of waking, the problem wonderfully clarified, and laid out before us, as if by magic? It is not magic, and must only seem magical and mysterious if we are chauvinistic in our mistaken narrow view of the personal self as being wholly present and solely instantiated in self-conscious being, which somehow self-motivates by the bootstrapping acts of self-conscious, rational will. Such self-motivation, if present at all, as I do believe it is, is but the thin shadow of the driver of the total person. The conatus drives the processes, which later may become manifest in consciousness, and in self-conscious rationality, ready made, and neatly

presented to the self-important aristocrat of the self-conscious rational, *merely present* self, who states, in his (or her) ignorance, "L'etat, c'est moi!", ignoring the vast conglomeration of the corporate self of overlapping chains of being towards becoming, which present the aristocrat of the present self their fine breakfast and news every morning, and carry on, for the most part, without the least prompting of his or her dictates. In this, we may be reminded of Hume's words, considering the nature of personal identity, when he considers that persons, properly understood, are more akin to nations ("republic or commonwealth"),[228] than to particular unified individuals.[229] Indeed there is much resemblance of Hume's bundle theory of persons to a processual theory thereof, and he does use the language of process to describe it:

> Thus as the nature of a river consists in the motion and change of parts; tho' in less than four and twenty hours these be totally alter'd; this hinders not the river from continuing the same for several ages. [230]

However Hume stops short of actually naming persons *as* processes, and, despite discussing the motivation of the passions or affects,[231] famously showing that rationality is not intrinsically motivating, fails to notice that the same critique may be applied to (especially the origin of) the passions, and so fails to account for, the more general underlying *driver* or motivator of the whole process that he describes, making this a bundle theory, rather than a process theory. Further, the analogy to nations is mistaken, in that he uses it to bolster his assertion that the individuation of persons is essentially illusory. As we will discover later in the remainder of Section Two and Three of this work, the conatus is neither illusory, since it has a deep basis in thermodynamics and biodynamics, nor is the individuation of persons or personal *selfhood* illusory, since it is a necessary corollary of the existence of this physical phenomenon at all. We may use the analogy to nations, but only if we make certain very particular preconditions, such as that

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[228] It might be considered, at this point, that we do indeed encounter what at least *appear* to be other minds, in the dream characters of our REM sleep. Could it be that these are, in some sense, not simply wholly unconscious illusions, but have indeed some conscious elements *in themselves?* The question is rather oblique, but is not empty of interest, or possible merit.
[229] Hume D. 1990 (f.p.1740) Op. Cit. note 28. Book I, Part IV, Section VI (p.261).
[230] Hume D. 1990 (f.p.1740) Op. Cit. note 28. Book I, Section VI (p. 258).
[231] Hume D. 1990 (f.p.1740) Op. Cit. note 28. Book II, Part III, Section III

the nation in question is indeed composed of a set of beings whose primary function and drive is the striving not only towards self-preservation of each corpuscular member of that nation, but also and necessarily that this striving must be necessarily and permanently aligned with the self-persistence of the nation-state itself.[232]

Thus far our analysis has been as half of an hourglass, beginning in the widest considerations of universal ontology, narrowing in to a focus upon the uppermost towers of the self, the apartments of the often chauvinistic mandarin we habitually misname *ourselves*, being the rational, self-conscious present partial manifestation of the total person. We have delved a little deeper, through the focal point, the core thesis, towards the wider depths of self below, to find the driver of selfhood, the conatus. But we have not examined the nature of the conatus itself, in terms of its origin, structure, and place in the wider ontology of the universe. We will now do so, before moving on, in Section Three, to open out into questions of the ethics of personal self-continuance in the social world. In our next analysis, prior to moving on to such higher considerations of interpersonal morality, we will, I assert, discover the root of all value, and the nature of the connection between morality, so often falsely considered to be the exclusive province of the imperial mandarin in her high tower, and the broad natural world. We shall, I believe, discover the method by which values, morality and ethics may be *naturalised*.

[232] Non co-operators or the unaligned, who strive for self-preservation solo, with no thought to the nation, and no alliance with its self-preservation as a whole, would then be analogous to cancerous cells, which have failed to exhibit contact inhibition, and have begun to procreate in a manner unaligned with the self-persistence of the body to which they belong. Cancer is often misunderstood as a disease of the body which may have a particular cure. It is father a form of bodily indiscipline, and has as many manifestations as there are methods and motivations of mutiny.

2.9.2 Conative-affective-cognitive: a suggestion concerning classic problems in metaethics

Perhaps the central debate in metaethics in the past two centuries has been that surrounding the issue of whether valuing activity is cognitive, or non-cognitive in nature. The classic picture, and among some modern conservative thinkers and very many (primarily religiously-minded) public this picture remains endorsed, is that there are moral facts which we come to know by dint of our cognitive faculties. Whether these are natural or "non-natural", and how they may be known is not our concern at this moment. These moral facts are in some mysterious way inherently orienting, such that mere knowing of them commands our affective psychology into certain attitudes, which in turn stimulates the conative aspect of our psychology to a greater or lesser extent, such that we may, or may not act upon such affective orientation. Following Hume's dissection of belief and motivation[233], and his separation of "is" from "ought" statements, a considerable philosophic scepticism of the cognitivist picture has arisen. The various streams of metaethics which have arisen subsequent to acceptance of the force of this scepticism have broadly abandoned, therefore, the idea that values and normative judgements are based *initially* in cognition, and have generally accepted some form of internalism about moral reason, whereby desires and attitudes-towards, are the initiator of, or even perhaps even synonymous with value and normative judgement. According to these theories, valuing activity would appear to be located primarily, and in its origin, in the *affective* component of our psychology. This is most explicitly clear in the emotivist[234] accounts of valuing, but is arguably the case in other expressivist accounts, such as the projectivism of Blackburn[235] among others. This has left considerable debate, however, concerning motivation itself, and in particular whether such affective states as desire or hope can in themselves be said to be in some sense intrinsically motivating. In

[233] Hume D. 1990 (f.p.1740) Op. Cit. note 28. Book II, Part III, Section III (esp. pp. 413-14).
[234] Chiefly following the work of Ayer, as originally argued in: Ayer AJ. 1936. Language, Truth, and Logic. Gollancz, London.
[235] This is not necessarily true of Neo-Kantian constructivist accounts such as that of Korsgaard which seek to locate the originator in the rational process, which then constructs the affective component. I will deal with this further in subsequent subsections, and especially in Section Three.

other words, there remains a question from a motivational internalist standpoint, about the various expressivist pictures, as they have hitherto been iterated. In short, just as Hume questioned the necessity of the jump from the cognitive to the conative, it may still be questioned whether there is any necessity of implication of the conative *from* the affective.

It is important, of course, to recognise that there is considerable blurring arising from the intertwining of the conative and affective aspects of consciousness, which complicates this picture. Indeed, the intertwining of conation with affect, and also with cognition at a very basic level has perhaps in part led to its being largely ignored as a *primary* factor. Conation has a way of being "assumed" within affect, indeed in the very way which made it a shock when Hume first began to untangle conation from cognition (being a necessary *result* of it, though conation is strongly associated with cognition in a driving role, as argued above). It is the possibly comprehensive nature of this intertwining for which I argue below as is acknowledged *inter alia* by the identification of the phrase "categoric desire", in my thesis, with conation. However, the question here is one of *primacy*.

I suggest that the theoretical move from the primacy of the cognitive to the primacy of the affective component of our psychology as the candidate for the fundamental origin of motivational attitude, or normative judgement, does not go far enough. In at least one case, and perhaps more generally, it appears to me that there may well be a deeper origin still: that of the conative aspect of our psychology itself. I consider, for example, that conation is a feature of cognition, but not in a way that falls foul of Hume's theory[236]. Rather conation, I argue, is the driver of cognition, just as it is the driver of affect, in that both these require, at base, a fundamental motivator for the processes which they represent.

[236] In that beliefs and knowledge are formed by rational process, which itself is driven by a conative nisus. That these beliefs do not have a necessary *further* conative component is not an issue for the role of conation in their construction.

2.10 Conatus: the Master Value.

Given an acceptance of a fundamental driver of personhood and predicator of the value of life's continuance to persons, what can be said about the nature of this objective motivation, this objective categorical desire? If it is objective in some way, insofar as its being irreducible to subjectivity, as the latter arises from its drive, and if we are, as I absolutely assert, wholly naturally constituted beings, then such a principle should, in principle, be open to description by natural, even empirical scientific means. Could this be done? What could possibly provide the arrow of the striving towards self-preservation, the striving towards the process of existing, if it is not subjectivity alone? Some things can be said at this point. Firstly, if it is a naturalistic "arrow" we are looking for, then it should be accessible to physics, or at least describable within a language of physical terms. Secondly, if it is correct *ex hypothesi*, that this natural phenomenon, law or principle should, in context of persons, be both the originator, universal driver, and fundamental orientator of value in the universe, perhaps as mediated secondarily by valuing activity in persons, then we come hard against the problem alluded to above: namely, how to reconcile such an idea with a naturalistic account, and in particular with a reductionistic account, which is the predominant model. A full treatment of this subject would amount to a book length treatise, so what follows in the remainder of Section Two should be regarded as a kind of speculative introduction.

2.10.1 A brief history of the conatus cluster concept

There exists a cluster of traditional positions in philosophy that centre on a concept known as the conatus. This constellation of ideas has had various incarnations at various times, with varying degrees of emphasis and scope, but at its core may be stated to be the principle by which things strive to keep themselves in being, or motion. If in the former sense of striving to keep in being, this usually encompasses the thing's striving not only to persist in being, but also towards self-enhancement, or self development. In the most ancient formulations of this concept[237], it was applied solely to the world of living organisms, but was later extended[238] to include the motions of inanimate as well as animate bodies, so physical dynamics.[239] This more comprehensive view was embraced by the early modern founders of empiricism[240], who were also, significantly, the founders of reductionist mechanistic views of the natural realm. The comprehensive view of conatus as explaining both the motions of bodies and natural forces such as centripetal and centrifugal "force", *as well as* the striving of living beings towards self-preservation and development reached its height in the writings of such 17th Century rationalists as Descartes, Leibniz, Hobbes and Spinoza. The views of the latter two are the most interesting in the context of this thesis. I will deal briefly with these further below, but it is important, at this point, both to untangle the central fault line in this cluster-concept, and at the same time briefly to explore the possible reasons for the general collapse of interest in the conatus hypothesis, subsequent to the Seventeenth Century. I account that this collapse was predicated by three main factors:

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[237] Particularly in the work of Aristotle, and later, the Stoics.
[238] Originally by John Philiponus, in the course of his criticism of Aristotle's theory of motion. See article by Christian Wildberg in the Stanford Encyclopedia of Philsophy: Wildberg C. 2007. John Philoponus. Stanford Encyclopedia of Philosophy. Available at: http://plato.stanford.edu/entries/philoponus/#2.2 [Accessed February 2008]
[239] Sorabji R. 1988. Matter, Space and Motion: Theories in Antiquity and their Sequel. Duckworth, London.
[240] For example by Bernardino Telesio, an important influence on Spinoza.

1. The conflation of the idea of the conatus as the driver towards self-preservation *and development* of specifically living systems, with that of the (superficially similar but deeply distinct) idea of the "driver" of the mechanics of motion in systems generally, whether inanimate or animate. In each case these (distinct) concepts were held to be a *positive force or principle that urges to motion.*

2. The emergence of a strictly reductionistic and mechanistic Scientific World View in the course of the 16th to the 18th centuries.

3. The publication of Isaac Newton's *Philosophiæ Naturalis Principia Mathematica* ("Mathematical Principles of Natural Philosophy").

It is perhaps easy to see why the ancient, and I believe still useful, concept of the conatus, as it appertains to the striving towards self-preservation and development of living biological systems became conflated with the quite separate set of attempts to answer the questions concerning the motions of physical bodies generally in the universe. Living bodies are seen to move. It is no great leap, particularly given a reductionistic project and commitment[241], to consider that the principles of the motion of living versus nonliving bodies may be accounted to be the same. The concept of the conatus was merely borrowed from its old category, and generalised in what appeared a quite logical manner, to apply to and explain the pressing question of what, say, keeps an arrow in flight, *as well as* a duck. That these concepts were only very broadly isomorphic, (the latter for example lacking the crucial element of *self development,* let alone reproduction, in living systems) perhaps did not trouble so much in an age wherein no such concepts were as yet clearly defined. After all, Natural Philosophy in the Seventeenth Century lacked the disciplinary specialisations of physics and biology. Further Descartes, Hobbes and Spinoza, among other major thinkers of this period, in line with a commonly accepted view of the day, held the motion of bodies in general physical dynamics to depend upon

[241] Evidenced, for example, in Descartes' assertion that all non-human animals were mere automatons.

some *active* force, which was conceptually isomorphic with the apparent active principle in animal behaviour.[242]

The publication of Newton's *Principia* on 5 July 1687 caused a revolution in thinking about physical dynamics, and one which, of course, had great consequences for the conatus cluster hypothesis, as it then stood[243]. The idea of an *active* force which kept bodies in motion, so arrows in flight, was demonstrated to be a misunderstanding and instead what caused the continuation of motion in moving bodies was shown to be a *passive* tendency, which Newton dubbed "inertia". According to this, Newton's First Law, arrows stayed in flight because all bodies resisted changes in their states of rest or motion, and would remain in such states until some force was applied to change these same. In the case of arrows, this was of course friction with the air, and the force of gravity (though this only impedes motion, of course, secondarily by occasioning contact with the ground), which meant that in absence of such friction or other impeding force, an arrow would continue to move smoothly and indefinitely, requiring no special "force" to propel it along. There was no need for an *active* principle or force whatever. The same applied to the centrifugal "force", dubbed by Descartes as the *conatus recedendi*, which subsequent to the Principia was recognised to be a "fictitious force" explained by appeal to inertial frames of reference, within which the First and Second Laws are seen to be valid. Simply put, the consequence of the new dynamics of the Principia and the aftermath of its publication was finally to hole below the waterline the concept of the conatus as an active principle in general physical dynamics[244]. With the collapse of the

[242] Pietarinen J. 1998. "Hobbes, Conatus and the Prisoner's Dilemma." Paideia Project, Boston University. Available at: http://www.bu.edu/wcp/Papers/Mode/ModePiet.htm [Accessed February 2008]

[243] That there is some controversy over whether Newton understood, at the time, the full consequences of this himself is neither here nor there, since the *Principia* precipitated the collapse of the conatus hypothesis subsequently in fairly short order, whether Newton himself was directly cognisant of this or not. See Kollerstrom for a critique of the historical implications of Newton's discoveries in this, *qua* Newton: Kollerstrom N. 1999. "How Newton Failed to Discover the Law of Gravity." *Ann Sci* 56, 331-356. Available at: http://www.ucl.ac.uk/sts/nk/newton-gravity.htm [Accessed February 2008]

[244] This is of course an oversimplification. However it neatly summarises what did actually happen, whose actual sequence was, as with the development and decline of all ideas in real history, messy and fiendishly complex. For example, while it is true that Descartes saw conatus as an active force ultimately derived from divine power, he considered that this was solely manifest as a primordial impulse from the Divine, the motion proceeding in a smoothly mechanistic manner thereafter (Geroult 1980 see reference at end of note). A book-length work would be required to tease out all the threads of this transition, but the broad lines of the story are, I believe, correct, and the story as told may be regarded (as with perhaps all history)

conatus concept in physical dynamics, and the ascendancy of a reductionist mechanistic view of the universe in large part predicated by the same natural philosophers who had completed the conjunction between the ancient, strictly biological, and the medieaval/early modern physical dynamical aspects of the conatus, the concept cluster as a whole appeared ramshackle and unfit for purpose, and thus largely disappeared from view.

However, the *total* collapse of the concept's perceived relevance may well have been premature. For the work done by the initial, ancient concept of biological conatus has yet to be adequately fulfilled and replaced by any modern theory. Taxis, or activity on the part of living organisms (including internal activities, for example maintaining homeostasis), while described as a general phenomenon in biology, are essentially merely assumed, and then described, rather than explained by a general theory, and the striving towards self-preservation which undoubtedly represents an *active* principle made manifest by such taxis is as yet not adequately explained in a hard reductionist, mechanistic manner, such that it is smoothly integrated with the physics of non-biological systems.

Before returning to this claim, however, it is important at this point to outline why some of the particular philosophies of the Seventeenth Century relating to the conatus are of great interest and relevance in context of this thesis, and more generally in modern metaethical discourse. The two philosophers who are most relevant in this regard are Hobbes and Spinoza. Each of these described a system of ethics and metaethics whose principal feature was the central role of the conatus of self-preservation and development in human psychology, making this principle in effect the "master value".

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as a heuristic approximation of the truth. See: Geroult M. 1980. "The Metaphysics and Physics of Force in Descartes." In: Descartes: Philosophy, Mathematics and Physics. Gaukroger S. (ed.). Harvester Press, Sussex.

2.10.2 Spinoza's conatus argument, physics, and modern metaethics

I will look at Spinoza first, although he was a later contemporary influenced by Hobbes, since his thinking is considerably closer to the spirit of this thesis. In his magnum opus, Ethics (published posthumously in the Opera Posthuma, 1677),[245] he undertakes an astonishingly comprehensive project to elucidate a rational and objective naturalistic explanation for ethics, with the conatus as its lynchpin and guiding principle. From this simple principle he constructed a comprehensive view of metaphysical and metaethical reality. Spinoza echoed Aristotle, Diogenes Laertius, and Cicero, as well as Hobbes in his belief that human affects and cognition had a dependency relation to conatus. This is best expressed in the Scholium to Proposition 9 in Part Three of his magnum opus, Ethics:

> [The conatus], when it is related to the mind alone, is called *will* but when it is related at the same time both to the mind and the body, is called *appetite*[246], which is therefore nothing but the very essence of man, from the nature of which necessarily follow those things which promote his preservation, and thus he is determined to do those things. Hence there is no difference between appetite and desire, unless in this particular, that desire is generally related to men in so far as they are conscious of their appetites, and it may therefore be defined as appetite of which we are conscious. From what has been said it is plain, therefore, that we neither strive for, wish, seek, nor desire anything because we think it good, but, on the contrary, we adjudge a thing to be good because we strive for, wish, seek, or desire it.[247]

In this statement, Spinoza anticipates what has become a central move in modern western analytic moral philosophy, starting with Hume's projectivism,[248] through Ayer's

[245] There do not appear to be any modern editions of the whole.
[246] The term appetite or appetitive was often used as a synonym or modifier or the conatus concept, when it was used in context of unconscious or pre-conscious living matter, or the states thereof. Leibniz, for example, primarily calls the conative, the appetitive. Although the latter (of the two following) may be said to be derived from it, the appetitive in the former sense should not be confused with simple appetite, in the sense of hunger for food, but is rather a more general physical principle, cognate with conatus.
[247] Spinoza B. 2001 (f.p. 1677). Ethics. Wordsworth Classics, Hertfordshire. Proposition 9, Scholium. (pp. 106-7)
[248] Hume D. 1990 (f.p.1740) Op. Cit. note 28.

emotivism,[249] and the quasi-realism of Blackburn[250] to Korsgaard's constructivism.[251] These all rely on the move from the conservative/religious classic position of locating moral psychology in cognition, but in a passive mode, in which one is cognisant of objective moral *facts in the world* which are apprehended by the cognitive faculties, and then in turn influence the affects and result in a conative stimulation or moral motivation, to locating the *originator* of moral psychology in the affects, such that the affective triggers the conative or motivating aspects (say, to primitive moral exclamations of outrage or approval) and from there (in constructivist theory, at least) to the cognitive in the *active construction* of more iterated moral concepts and normative theories. However Spinoza goes further than these, stating unequivocally that the conative aspect of mind is the prime moral psychological driver[252], in this way providing an objective moral "arrow" or moral "master value" that is largely free of the embarrassing difficulties of the classic moral cognitivist picture, which theory, in order to explain the mysterious moral "objects" which are apprehended in cognition, is forced either to postulate supernatural properties or "non-natural" properties (hardly distinguishable, in my view, and equally suspect, requiring a special faculty of "moral intuition", presumably itself natural, which surely begs the question), which cannot be accounted for in a naturalistic frame.[253] The non-cognitivist theories, which locate the originator of value in the affects, suffer from the difficulty of *explaining* motivational internalism, in other words they simply don't explain why the affects give rise to motivations, especially moral or valuing motivations, if they are themselves the prime originators, they simply state that they do, or assume them altogether. In this way, they again suffer from some of the central problems they themselves lay at the door of cognitivism, for if the motivational aspects of moral "facts" or properties require (and lack) naturalistic explanation, the same is true of the affects,

[249] Ayer AJ. 1936. Op. Cit. note 234.
[250] Blackburn S. 1985 and 2000 Op. Cit. note 32.
[251] The picture is slightly more complicated in Korsgaard, but I consider that her neo-Kantian position has indeed made this move, and is indeed a form of non-cognitivism, in that while values are cognitive features, they are constructed within the cognition, and are not perceived as external facts by the cognitive faculty, prior to such a construction. Korsgaard C.1996. Op. Cit. note 207.
[252] Conation, less well recognised generally, is typically the poor cousin in modern psychological theory, but nonetheless represents one of the triumvirate of basic psychological modes conative, affective, cognitive. Though Spinoza's hierarchy is not presently widely accepted in this field, Freud expressed something rather similar to Spinoza's position, and grudgingly acknowledged this influence in his work.
[253] Mackie JL. 1990. Op. Cit. note 36.

unless these are somehow radically sui-generis, as is to say the least, unlikely in a naturalistic schema. Following my analysis of persons necessarily as processes, however, it appears that the affects simply cannot be the fundamental motivators, as they are themselves driven into being by some more fundamental motivating principle.[254] Spinoza's construction of the conatus, however, postulates a far more elegant schema than these above described projectivist, emotivist and constructivist ideas, whose project is at least significantly intended towards locating value in a naturalistic frame. As outlined further below, I believe that the conatus at the heart of Spinoza's project of naturalising this psychological and normative *ursprung* may be beginning to be described and located in modern natural scientific terms.

The relevant propositions of Spinoza's *Ethics* that define the conatus principle in this context are propositions 4 to 9 of Part Three:

Proposition 4: A thing cannot be destroyed except by an external cause.

Proposition 5: In so far as one thing is able to destroy another they are of contrary natures; that is to say, they cannot exist in the same subject.

Proposition 6: Each thing, in so far as it is in itself, endeavours to persevere in its being.

Proposition 7: The effort by which each thing endeavours to persevere in its own being is nothing but the actual essence of the thing itself.

Proposition 8: The effort by which each thing endeavours to persevere in its own being does not involve finite but indefinite time.

[254] Horrobin S. 2006. Op. Cit. note 119.; Horrobin S. 2006. "Immortality, Human Nature, The Value of Life and the Value of Life Extension". *Bioethics* volume 20, number 6, pp. 279-292.

Proposition 9: The mind, both in so far as it has clear and distinct ideas, and in so far as it has confused ideas, endeavours to persevere in its being for an indefinite time, and is conscious of this effort.[255]

It is not the purpose or focus of this thesis fully to elucidate Spinozistic metaphysics, but some brief discussion will help clarify the situation, as I think it stands. Spinoza died a decade prior to the publication of Newton's *Principia*, and nearly two centuries prior to Rudolf Clausius' description of the second law of thermodynamics,[256] and entropy.[257] The latter's significance will be discussed further below, but in the context of the above propositions, it is clear that this latter principle in physics constitutes a problem for propositions 4 and 5, but equally one of which Spinoza could not possibly have been aware. With regard to inertia and conatus, Spinoza applied the latter equally to nonliving and living entities, which he referred to as "modes" of the ultimate singular "substance", which term is synonymous with "nature". He made no strict delineation between them as regards the conatus, but I believe that this is precisely because he did not have access to either of the concepts of inertia, or of entropy, which combined provide a reason both to reject talk of conatus in the context of a *general* physical dynamics, but on the other hand, in the case of thermodynamics may give us a reason *not* to reject talk of the conatus as a whole, and indeed to seek to amend his propositions accordingly, or build their like afresh in a new, more comprehensive system. More will be said about the latter below, and I will return to the implications of the other propositions shortly, but first it is important briefly to outline the use of the conatus concept by Hobbes, since it has an equally resonant modern aspect.

[255] Spinoza B. 2001 (f.p. 1677). Ethics. Wordsworth Classics, Hertfordshire. pp. 105-107.
[256] Clausius R.1850. "*Über die bewegende Kraft der Wärme.*" *Ann Phys* 79, 368-397, 500-524
[257] Clausius R. 1865. The Mechanical Theory of Heat – with its Applications to the Steam Engine and to Physical Properties of Bodies. John van Voorst, London.

2.10.3 Hobbes, the conatus, and evolutionary theories of morality

Essentially, for Hobbes, the conatus was the master value in that each living being strived to preserve its own life, and in context of conscious social beings, and especially self-conscious, rational social beings of the nature of humans, this striving was seen to be best served by entering into contractual arrangements which allowed for peace, and an end to the war of all against all. The war itself was predicated by the requirement for resources to be accumulated by each individual, from food on upwards, in order to preserve themselves in existence.[258] The resource-gathering behaviour was best done, according to a kind of game theory,[259] in localised cooperation, rather than general hostile competition. These contracts may be seen to be either the primitive, prelinguistic social bonds of herds or packs or flocks of animals, or the linguistically iterated, complex, and conceptually abstracted concepts of particular tribes, societies, nations, etc. Crucially, in Hobbes, these larger groupings would then be seen to act in ways that made them appear to be a corporate body, or a single, self-interested person, which for Hobbes was quite literally personified in the body and person of a monarch or dictator.[260] The resonances between this and Hume's conception of person-processes as being akin to nations are not to be overlooked. These corporate bodies, given finite resources, would of course enter into competition with other such, in some cases predicating war on an international scale, but also, more fruitfully, providing the rationale for cooperation in the form of political treaties to foster the benefits of international economics. It doesn't take a great leap of the imagination to see how this Hobbesian model lies in conceptual isomorphism, and

[258] Vitally, this maps very neatly on to the requirement of non-linear open thermodynamic systems, in order to hold themselves far from equilibrium, to feed on "free energy", dumping increased entropy or statistical (Boltzmann) disorder downstream of themselves. Because of the requirement of the second law of thermodynamics that entropy increases in the total system, it can only be decreased within strictly bounded systems, or localised groups of systems, even if they are subsystems within a mid-range open thermodynamic system such as a planet, fed with free-energy by a star. Thus such systems will, in order to exist at all, necessarily compete for resources, in order to "swim upstream" of the flow of Gibbs free energy, and thus maintain and develop themselves. This note will become clearer on reading the remainder of the paper.

[259] See e.g. Pietarinen J. 1998. Op. Cit. note 242.

[260] Hobbes T. 1998 (f.p. 1651). Leviathan. Oxford World's Classics, OUP, Oxford

considerable accord, with modern evolutionary biological theories of ethics, wherein the "contractarian" impulse, driven by the need for survival, is described as biological "altruism", predicated by "group selection".[261] Indeed considering evolutionary theory as a whole, while it is most certainly correct in its basic premises of evolution by natural selection, it *crucially appears to lack an elucidation of one of its central assumptions:* that living beings do in fact strive to keep themselves in being. This concept is simply *assumed* as a precondition, after which, all else follows according to Darwinian principles, very nicely. However one must be very cautious not to draw any hasty, morally reductionistic conclusions from this nexus. The situation is more complex than it might prima facie appear.

[261] For a discussion of the manner in which ethics may arise from biology, see: Ridley M. 1997. The Origin of Virtue. Penguin, London

2.10.4 The conatus and modern thermodynamics of self-organised systems

So what, then could we say, in modern, scientific terms about this missing principle, about this ancient but possibly magnificently useful concept of the conatus, whose conceptual cognate appears to be assumed by the most stable and useful theory in the whole of biology, and possibly the whole of the sciences? Where can we turn for inspiration?

I believe, as an initial port of call, we may turn to an essay by physics Nobelist Erwin Schrodinger, originally delivered as a lecture in Dublin in 1943, entitled "What is Life?".[262] This essay is especially fascinating because it represents a rare and immensely powerful nexus between the now fragmented disciplines of physics, biology, and philosophy, once whole within Natural Philosophy. The significance to biology of this essay cannot be overstated, since Schrodinger's description within it of the replicating material of living organisms as an aperiodic crystal of a certain size, with the property of replication facilitated by genetic information encoded in a system of covalent chemical bonds accurately gave Watson and Crick their target zone.[263] Apart from successfully outlining and predicting the "master code" of living, self replicating systems, another, indeed overriding, aspect of this paper deals with the historically more metaphysical, though in this context the intention is to make it precisely physical, question of what living matter is, as opposed to non-living matter:

> The large and important and very much discussed question is: How can the events in space and time which take place within the spatial boundary of a living organism be accounted for by physics and chemistry? The preliminary answer which this little book will endeavor to expound and establish can be summarized as follows: The obvious inability of present-day physics and chemistry to account for such events is no reason at all for doubting that they can be accounted for by those

[262] Schrodinger. 1967 (f.p. 1944) What Is Life? Mind and Matter. Cambridge University Press, Cambridge. Available at: http://home.att.net/~p.caimi/schrodinger.html [Accessed February 2008]
[263] Watson J. 1968. The Double Helix- A personal account of the discovery of the structure of DNA. Weidenfeld and Nicholson, London.

sciences. (Schrodinger 1944; Chap 1, 1st para)

Schrodinger's conclusion is essentially merely to draw a more specific target area, and may very roughly be stated as being that living organisms constitute bounded material systems which by their activities prevent themselves falling towards equilibrium, or succumbing to the effects of entropy (as defined by a statistical, so Boltzmann interpretation of the Second Law of Thermodynamics), by feeding on "negative entropy", which is also known as Gibbs free energy available in their environment, and dissipating it through their processes. In more modern language, following the work of the likes of Nobel Laureate physicist Ilya Prigogine,[264] we might describe these same as nonlinear dynamic dissipative open systems that are subsets of an open thermodynamic system in the form of the biosphere of the earth, with the sun providing a constant supply of raw, "free energy". All other "nonliving" systems fall toward equilibrium in a fairly smooth statistically predictable manner, and exhibit no taxis, behaviours, or activities which "swim upstream" of the fall towards equilibrium, and most particularly no "self developing" *activities*, which exhibit innovation or variation of both strategy and physical form with the common object of maintaining an internally low entropy, or state far from equilibrium, both within the system of each instantiated living being, within groups of living beings, and along the genetic line of descendants, as do living systems.

What is on offer here is not, at least not yet, an answer. It is more of an outline, a pregnant absence, like remarkable tracks in the snow, giving some idea that not only is there some unknown or new kind of beast, but what general shape and size it might be, and which direction it appears to run, leading on, perhaps, to where it might be found, studied, and finally fully described. Speaking of this outline, Schrodinger draws what he calls a "remarkable general conclusion from the model":

> …there is just one general conclusion to be obtained from it and that, I confess, was my only motive for writing this book. From Delbruck's general picture of the hereditary substance it emerges that living matter, while not eluding the 'laws of physics' up to date, is likely to involve 'other laws of physics' hitherto unknown,

[264] Prigogine I. 1997. The End of Certainty: Time, Chaos, and the New Laws of Nature. The Free Press, New York, NY.

> which, however, once they have been revealed, will form just as integral a part of this science as the former.[265]

This is very much the conclusion that the complex systems researcher and theoretical biologist Stuart Kauffman also draws, and towards the elucidation of which his remarkable book *Investigations*[266] reads like a training manual for future trackers of this perhaps new thermodynamic principle or law. Whatever final shape this will take, some things are reasonably clear. Most particularly what might be said is that this principle has a *directionality* about it. If the classical thermodynamic principle of entropy (as statistically described by Boltzmann) provides not only a ratchet giving us the arrow of irreversibility in physics, but perhaps even the arrow of temporal directionality itself, as has been suggested,[267] then it is not so surprising, perhaps, that a still elusive member of this genus should possess an arrow of its own, perhaps even bestowed by the directionality of the former, classic Second Law: the quasi-opposing arrow of striving towards self-preservation, and self-development in specifically living, biological systems. Yes, I am suggesting that these concepts are not merely isomorphic, but that the paw of the ancient conjectural beast of the conatus of living beings appears to fit precisely into the pawprints of this possible new law. It is no coincidence that Schrodinger chose to preface his essay with a quotation from Spinoza's ethics, specifically Part IV, Proposition 67: "Homo liber nulla de re minus quam de morte cogitat; et ejus sapientia non mortis sed vitae meditatio est." (A free man thinks of nothing less than of death, and his wisdom is not a meditation upon death but upon life.) The demonstration to the Scholium continues:

> A free man, that is to say, a man who lives according to the dictates of reason alone, is not led by the fear of death, but directly desires the good; that is to say, desires to act, to live, and to preserve his being…[268]

Returning to Spinoza's propositions relating to the conatus, we may now suggest that, provided one allows for the developments of inertia, separating the conflated cluster-concept into its component parts, and doing away with the general, but not the living-

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[265] Schrodinger. 1967 (f.p. 1944). Op. Cit. note 262.
[266] Kauffman S. 2003, Investigations. Oxford University Press, New York, NY.
[267] Zeh HD. 2001. The Physical Basis of The Direction of Time. Springer-Verlag, Berlin and Heidelberg. Available at: http://www.time-direction.de/ [Accessed February 2008]
[268] Spinoza B. 2001 (f.p. 1677). Op. Cit. note 255. (p, 212.)

systems case, and provided likewise one allows for a modern understanding of entropy, then while propositions 4 and 5 need at least amendment, propositions 6-9 look remarkably accurate, and appear to be perfectly in line with a putative thermodynamic arrow specific to self-organising systems far (and increasingly far) from equilibrium. Further, they provide a clear route by which, through a process understanding of personhood and subjective value generation, ethics can be joined to modern conceptions in systems biology, and theoretical physics, and thereby provide a coherent route by which norms may be naturalised, and at least one value, the Master Value, may be seen to have a very real, and indeed *objectively* real ontology!

2.10.5 Jonas, autopoiesis, biodynamic value and the irreducibility of subjectivity

Probably no single thinker has made a bolder and more iterated attempt at naturalising value within a specifically biological organismic system, and as a necessary consequence of the ontology of such a system, than has Hans Jonas. In a series of essays beginning in the middle 1960s and extending through the early 1990s, Jonas outlined his vision of the simultaneous and co-dependent ontology of organisms, value and subjectivity. Aware of the common reference to biological organisms as "machines" with all that such a term implies about thoroughgoing eliminative reducibility to material efficient causes both of any apparent value and subjectivity itself, which in this conception are held to be sorts of illusions, he sought to distinguish between mere machines and organisms by first defining what exactly is the difference between living and non-living systems, using the paradigm process of metabolism as his initial model:

> As a physical body the organism will exhibit the same general features as do other aggregates: a void mostly, crisscrossed by the geometry of forces that emanate from the insular foci of localised elementary being. But special goings-on will be discernible, both inside and outside its so-called boundary, which will render its phenomenal unity still more problematical than that of ordinary bodies, and will efface almost entirely its material identity through time. I refer to its *metabolism,* its exchange of matter with the surroundings. In this remarkable mode of being, the material parts of which the organism consists at a given instant are to the penetrating observer only temporary, passing contents whose joint material identity does not coincide with the identity of the whole which they enter and leave, and which sustains its own identity by the very act of foreign matter passing through its spatial system, the living *form*. It is never the same materially and yet persists as its same self, *by* not remaining the same matter. Once it really becomes the same with the sameness of its material contents – if any two "time slices" of it become, as to their individual contents, identical with each other and with the slices between them – it ceases to live; it dies [Main text]… [Footnote text] We have to realize the all-pervasiveness of metabolism within the living system. The exchange of matter with the environment is not a peripheral activity engaged in by a persistent core: it is the total mode of continuity (self-continuation) of the subject of life itself. …[A] machine persists as a self-identical inert system over and against the changing identity of matter with which it is

> "fed"; and, we may add, it exists as just the same when there is no feeding at all: it is then the same machine at a standstill. On the other hand, when we call a living body a "metabolizing system," we must include in the term that the system itself is wholly and continuously a result of its metabolizing activity, and further that none of the "result" ceases to be an object of metabolism while it is also an agent of it. For this reason alone, it is inappropriate to liken the organism to a machine. … metabolism is more than a method for power generation: in addition to, and more basic than, providing kinetic energy for the running of the machine,… its role is to build up originally and replace continually the very parts of the machine. Metabolism is thus the constant becoming of the machine itself – and this becoming itself is a performance of the machine: but for such performance there is no analogue in the world of machines. [269]

Having established this basic definition of living systems, so organisms (metabolic quasi- or para-machines), he establishes what he regards as the necessity of isolation of such systems from the background environment they inhabit. Such isolation is required for the identification of *just what it is which is the subject of concern of the process of continuous self-establishment of form.* This necessary isolation in itself requires and defines the *inwardness* of organismic structures, which is identical with their "selfhood", with necessary boundaries, or boundedness defining the beginnings of "self" and "other":

> In purely physical description, no more than continuous presence in the containing continuum is assumed (but no less can be assumed) for the "sameness" of an entity; and thus, on physical terms alone, there is only this external identity conferred on discrete units (particles and fields) by the *principia individuationis* (space and time), or, equivalently, by the totality of the physical universe defining their place: in either case a matter of *external reference.* Of an internal principle of identity in physical particles we do not know, even if there be one. Organic identity, however, must be of a different nature altogether. In the precarious metabolic continuity of the organic form, with its perpetual turnover of constituents, no inert substratum, no single "path" and no "bundle" of parallel paths of contemporaneous members, is available as referent for external identity. Internal identity of the whole, transcending the collective one of the present and vanishing substratum, must span the shifting succession. … The introduction of the term "self," unavoidable in any description of the most elementary instance of life, indicates the emergence, with life as such, of internal identity – and so, as one with that emergence, its self-isolation too from all the rest of reality. Profound singleness and heterogeneousness within a universe of homogenously interrelated existence mark the selfhood of the organism. An identity which from moment to

[269] Jonas H. 2001 (f.p. 1966) "Is God a Mathematician?" In: The Phenomenon of Life. Northwestern University Press, pp. 75-76

> moment reasserts itself, achieves itself, and defies the equalizing forces of physical sameness all around, is truly pitted against the rest of things. In the hazardous polarization thus ventured upon by emerging life, that which is not itself and borders on the realm of internal identity from without assumes at once the character of absolute otherness. The challenge of selfhood qualifies all this beyond the boundaries of the organism as foreign and somehow opposite: as "world" in which, by which, and against which it is committed to maintain itself. Without this universal counterpart of otherness, there would be no "self".[270]

Although he does not characterise such a metabolising system as such, what he is in effect describing here is indeed very much a dynamic, dissipative system as is described above. The boundedness of a thermodynamic system which *actively* stabilises and, especially, *develops* itself towards states of increasing improbability and decreasing entropy *must* do so in isolation from the background, in virtue of the very dictates of the Second Law of thermodynamics.[271] In this way Jonas' vision is, I believe, wholly in accord with the thermodynamic concept of living systems. However Jonas is not very explicitly aware of this relation, and not especially concerned to locate such structures within their thermodynamic description, concerned as he is with general physics primarily in a phenomenological mode to distinguish them from pure mechanisms of the strictly reducible kind. In this way he never really iterates a clearer concept of the nature of the arrow of what we have called the conatus, other than to describe it in classic Heideggerian terms as the analogue of "care" or "self-concern" (though he critiques Heidegger in the very terms of this concept).[272] He is primarily concerned in this work to make the physical distinction by appeal to the phenomenological reality of subjectivity,

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[270] Jonas H. 2001. Ibid. pp. 81-83

[271] The requirement in particular is given by the fact that the second law mandates that all (non-living) systems, in totam, move towards states of greater probability, and increased entropy, so declined "free energy" available for "work", such as the "work" of activity towards self-persistence. But this in itself means that for any system not merely to stabilise the increase in entropy, but actively to *reduce* entropy, such reduction *can only take place within a specifically bounded space*, for any such reduction in one area of a total or wider system, *will increase entropy in another part of the total or wider system.* In this case, the increase will be downstream of the system itself, such that while entropy is decreased in the bounded area of *self-concern* of the metabolic system in particular, the very activity which causes this reduction *increases*, and *must increase entropy* in the immediate environment of that living subsystem. Such subsystems are called *dissipative* precisely because they reduce free energy by dissipating it, from the point of the total system, and rather than decreasing, actually increase total entropy. Because the second law mandates an increase in the *total* system, including living and nonliving matter in a single mereology, decrease in entropy is, and can only be local, and must needs therefore be *bounded*.

[272] e.g. see: Jonas H. 2001 (f.p. 1966). "Gnosticism, Existentialism, and Nihilism." In: The Phenomenon of Life. Northwestern University Press, pp. 231-232

which he considers to be irreducible to the pure mechanism of universal efficient causes, as conceived through the device of a "mathematical God" or "pure Mathematician", rather akin to the "demon" of Laplace described further below in the final subsection of this section. Further, Jonas states that knowledge of such selfhood, such internalism of "identity", is required for any such ascription itself to take place at all:

> But what kind of inference is this? And by whom? How can the unprepared observer infer what no mere analysis of the physical record will ever yield? The unprepared observer indeed cannot: indeed the observer must be prepared, as the hypothetical "pure Mathematician" is not. The observer of life must be prepared by life. In other words, organic existence with its own experience is required of himself for his being able to make that inference, which he does make all the time, and this is the advantage – perennially disowned or slandered in the history of epistemology – of our "having," that is, being, bodies. Thus we *are* prepared by what we are. It is by this interpolation of an internal identity alone that the mere morphological (and as such meaningless) *fact* of metabolic continuity is comprehended as an incessant *act*; that is, continuity is comprehended as self-continuation.[273]

It is by the selfness of living systems, by their necessary non-identity with their particular physical constituents, and by their *awareness* in some sense, which is a proto-awareness, non-conscious, initially, but manifested by the necessary *mediacy* of their quest towards self-persistence, of their own self-inherence and the coincident directedness of their *activity* towards the persistence of this self-inherence, and its necessary distancing of self from surrounding matter (in order to find food, and escape danger, for example) that both *transcendence* of brute nonliving matter is brought into definite being, along with a necessary teleology. By transcendence is meant, at first, simply this very self-inherence by which living organisms separate themselves from, and transcend identity with the purely objective mechanistic world of matter, and by teleology is meant, at least at first, the final cause of the purposiveness of activity towards self-persistence of form as such a self-inherent process. This latter will later be seen to be somewhat misleadingly named a "final" cause, as it is not a closed-ended arrow, but an intrinsically open ended one. Jonas

[273] Jonas H. 2001. Op. Cit. note 269. p. 82.

accepts that the exact nature of the relationship between the brute *linear*[274] mathematical physics of the mechanistically determinate world of inanimate matter, and the self-inherent, apparently irreducibly subjective realm is mysterious, but asserts the necessity of the above conclusions in despite of the apparent lack of smoothly conjoining rationale:

> But there is always the purposiveness of organism as such and its concern in living: effective already in all vegetative tendency, awakening to primordial awareness in the dim reflexes, the responding irritability of lowly organisms; more so in urge and effort and anguish of animal life endowed with motility and sense-organs; reaching self-transparency in consciousness, will and thoughts of man: all these being inward aspects of the teleological side in the nature of "matter." How this finalism tallies, in the same world, with mechanical causality whose reality cannot be denied either is a problem not to be "solved" by sacrificing evidence (purposiveness) to a theorem (exclusiveness of *causa efficiens*) which was derived by generalization from another evidence; but, if solvable at all, only by treating it as the profoundly challenging and as yet completely unsettled problem it is. At all events, the teleological structure and behaviour of organism is not just an alternative choice of description: it is, on the evidence of each one's own organic awareness, the external manifestation of the inwardness of substance. To add the implications: there is no organism without teleology; there is no telelolgy without inwardness; and: life can be known only by life. This is the advantage we poor mortals have over Jeans's mathematical God: happening to be living material things ourselves, we have in our self-experience, as it were, peepholes into the inwardness of substance, thereby having an idea (or the possibility of having an idea) not only of how reality is spread and interacts in extensity, but of how it *is* to *be* real and to act and to be acted upon.[275]

The irreducibility itself is not the specific focus of Jonas' enquiry. He essentially simply notes it, asserts that there is no priority of evidence logically necessitated between subjective phenomenal and ordinary "objective" mechanical scientific observation, which means that in empirical inquiry we have to take both seriously, and moves on. In the final subsection of this section I will discuss the implications of this discontinuity, and whether or not we should consider that there are hidden principles of an ultimately *entirely* reducible kind, whose nature is as yet unexplained, or whether the phenomenon of

[274] Dissipative systems are expressly nonlinear structures, but in any case this nonlinearity is insufficient in itself to capture what Jonas means by irreducibility of selfhood. Such a deep irreducibility may be a strongly emergent fact of the universe, involving the establishment of wholly new laws at the level of organisms. This is the interpretation I take of the irreducibility that *Jonas* highlights. For further discussion of irreducibility and emergence, see the final subsection of this section.

[275] Jonas H. 2001. Op. Cit. note 269. pp. 90-91.

selfhood and subjectivity, together with what I consider to be its formative counterpart, the thermodynamic arrow of the conatus, is *as a local principle belonging to the emergent layer of the universe which begins at the level of living systems,* formally discontinuous with, and so strongly emergent from the "lower" physics from which it arises. The chief distinction here is between a reductionist-constructivist view, and a reductionist view as distinct from a constructivist one, in which case emergence may be real, rather than illusory. Returning to Jonas, the key insight, then, is that metabolising systems have an irreducible inwardness which necessarily separates them from the rest of the mechanical-causal continuum, and this separation itself predicates phenomenal distance, described as *mediacy*, for example the mediacy which is required for simple organisms first to apprehend the presence *necessarily as external to themselves,* and then to distinguish food from toxin, shelter from predator or adverse environmental circumstance, free energy from destructive energy, and initiate actions to and from these detected facts in the world of "other". A key observation of this mediacy is that as it increases, as subjects gain greater sensory distance between themselves and the "other", their environment, this self-inherence itself *increases,* such that both the depth and scope of the subjectivity, and the value of selfhood to self increases. He characterises this increase as an increase in *risk*:

> In terms of mere biological safety, the advantages of animal over plant life are highly questionable, and in any case they are bought at a heavy price. … Motile existence is fitful and anxious: plant life is nothing of the kind. But doubtful as are the gains of motility and a balance of mere survival values, the survival standard itself is inadequate for the evaluation of life. If mere assurance of permanence were the point that mattered, life should not have started out in the first place. It is essentially precarious and corruptible being, an adventure in mortality, and in no possible form as assured of enduring as an inorganic body can be. Not duration as such but "duration of what?" is the question. … The feeling animal strives to preserve itself as a feeling, not just a metabolizing entity, i.e., it strives to continue the very activity of feeling: the perceiving animal strives to preserve itself as a perceiving entity – and so on. Without these faculties there would be much less to preserve, and this *less* of what is to be preserved is the same as the *less* wherewith it is preserved. … The selfhood here adumbrated has from the beginning its counterpart in the otherness of the world. The further accentuation of this dualism with all its inherent burden is nothing but the accentuation of life itself. Its dialectic cannot but make each more developed state of it more double-edged. From this point of view we see wherein the real advance of developed animality

> lies. … This increased mediacy buys greater scope, internal and external, at the price of greater hazard, internal and external. A more pronounced self is set over a more pronounced world. The progressive nervous centralization of the animal organism emphasizes the former, while correspondingly the environment becomes open space in which the free-moving sentient has to fend for itself. In its greater exposure and the pitch of awareness that goes with it, its own possible annihilations becomes an object of dread just as its possible satisfactions become objects of desire. Its enjoyment has suffering as its shadow side … Its price from the beginning was mortality, and each further stage of separation pays in its own coin … The kind of coin determines the value of the enterprise. The rift between subject and object, which long-range perception and motility opened and which the keenness of appetite and fear, of satisfaction and disappointment, of pleasure and pain, reflect, was never to be closed again.[276]

As the organism increases, through evolution, its distance from, the mediacy between itself and the world as "other" from which it must secure its survival, its self-inherence also deepens, since the increase in mediacy is predicated by its abilities to detect and interact with ever more distant states of and (other) agents in the external world, as opposed to mere structural coupling with the instantaneously present immediate world in which it physically exists. This increase in sensory capability requires that the evolving organisms inhabit a self-inherent space which is increasingly temporally extended and recursive, with recollection and anticipation allowing for movement towards "positive" stimuli, and away from "negative", ever more distantly located in space, and therefore also in time. The activity of movement towards or away from some stimulus judged to be positive or negative involves the maintenance of that activity in anticipation of a future event, and with recollection of a past stimulus (especially as greatly increased mediacy allows mapping of recollected stimuli which are not continuously present). This activity must constantly be monitored by the organism in a recursive fashion to allow it to update its activity to accommodate for any changes such as changes in position of the stimulus, but most particularly in case of *error* of judgement. The stimulus, distant in space and time, might, as the organism moves towards it, turn out rather than positive, to be negative, requiring evasive action to be taken. *Crucially,* any self-propelling active organism failing to possess at least some basic system of sense-mediated recursive *adaptivity* to changing circumstances*,* will rapidly become extinct, for reasons which

[276] Jonas H. 2001 (f.p.1966). "To Move and to Feel: On the Animal Soul." In: The Phenomenon of Life. Northwestern University Press. pp. 106-107

appear obvious. The necessity for self-persistence of the organism supplies the ultimate norm upon which these value judgements are made. That they are *judgements of* the organism itself is made true specifically in virtue of the mediacy of the organism with its environment, and the increase in that mediacy increases the internal, or self-inherent recursive *activity modulating* processes of the organism itself.[277] In this way the organism adapts to its environment through behaviours and *activities* that are not determined by the immediate structural coupling of its physical self with the immediate physical world around it, but are projections upon that world of the increasingly self-inherent, increasingly temporally extended, and increasingly capacious internal processes of sensory *evaluative* mediation. This mediacy is itself made possible by, and so coevolves with sensory capacities, and increases as these become more sophisticated, and as new such emerge. So, above the level of simple self-sustaining direct chemical interaction by direct structural coupling between itself and the immediately surrounding matter, there are increasingly mediate stages made available by sensing capacities from mechanical senses such as temperature (which is vital to homeostasis and is likely among the very earliest) and vibration sense (important for primitive organisms in a liquid medium, which may or may not have relation to the advanced sense of hearing) through chemosense (eventually very sophisticated with many manifestations, some, as in the case of the Emperor Silk Moth, enabling startling mediacies of 40 km or more, with concomitant distances in time- some theorists consider that chemosense, and in particular the necessity for storage and interpretation of the very complex information conveyed by it, is the originator of the vast increase in self-inherence represented by the centralisation of the nervous system) upwards through the various stages of this ultimately to sight. For Jonas, sight is the sense which predicates, eventually, self-perception, and self awareness, for it allows the very first eidetic control of the self, the imagination of outside events, and the mapping of their possible future progression in eidetic terms, and so ultimately leads to project (and life plan) making based upon full self-representation, or self-

[277] Consciousness is not, on this model, necessary to judgement in this basic sense. Thus an amoeba which swims hard towards and engulfs a nearby cell with its parapodia, makes a judgement to do so, as it had wide range of other possibilities for behaviour, including flight from the cell. The cell in turn may be a flagellate, which makes a judgement to evade or not, and in which direction to self-motivate or else may turn out to be a eukaryote predator itself, which instead of evading, engulfs the would be engulfer. In the latter case, it is perfectly reasonable to say the first amoeba made an error of judgement in a complex system, based upon a false assumption.

consciousness. It is this self-awareness, founded in eidetic self-representation, which allows human persons to exist fully as *persons*, in the sense outlined by the criteria of autonomy, rationality, and self-consciousness.

Now we must be careful to distinguish what is going on here from a premeditated, ordained or designed mode of teleology. The foregoing can rather be characterised in fairly mechanistic, or blind terms. In the passages quoted above, it is easy to see a parallel in the concept of a ratchet, such that at each stage what is valued is the persistence of selfhood as it is at that stage. In the struggle to preserve what has been gained, the agent searches the space of possibilities, and this, combined with the biological instabilities of natural selection, genetic drift, and the genetic drives of random mutation, chiasmata, lateral gene transfer, and viral (especially retroviral) transfection determine the development of the organism through processes of ever-greater mediacy. This ever greater mediacy, experienced as it is as gain bought through increase of risk, and increase of *perception* of risk, itself predicates increase of self-generated *value* through the extension of the self-inherent space of the organism's self-and-world mapping of risk and reward, of fear and goal, of retreat and project, eventually, of despair and self-inherently valued at a (nearly) wholly second-order level life-plan. To return to the basic relation: the more deeply and acutely the organism perceives risk, the more deeply and acutely must it perceive and value itself and the continuation of that self's processes, in which it inheres, and by which it is instantiated.

He does not discuss it as such, and indeed rather ignores it, having foregone talk of physics largely at the boundary of "self" and "other", living and non-living matter and process, but this living process is itself not above physics, but wholly within it. It is, therefore, in turn, fundamentally driven, as I contend, by the arrow of the conatus, which is the emergent thermodynamic arrow peculiar to living organismal systems.[278] I would suggest that the increase in value as described by Jonas matches, and *extends from* so is the mirror or shadow or representation of, the increase in the "length" of the arrow of

[278] There is increasing advocacy in the philosophy of science of the concept of local, rather than universal interpretations of physical laws. See e.g. Cartwright N. 1999. The Dappled World: A Study of the Boundaries of Science. Cambridge University Press, Cambridge.

thermodynamic conatus as a principle or law of matter and *emergent* attribute of nature manifest solely at the level of living organisms. The increase in "risk", "value of self" and mediacy corresponds very nicely to the increase in complexity, Boltzmann improbability and self-organisation..

Returning to Jonas, at this point in his story, the tale takes a remarkable turn, one wherein the peculiarly *moral* self-recognition of human persons, and the attendant possibility for eidetic re-objectification, brings with it the suggestion of the possibility of a return to unity of the self with the objective whole, from which it has become so profoundly disunited as an irreducibly self-inherent *subject*. The natural history of the arising and evolution of value, coincident with and necessarily a foundational part of biological arising into existence, and subsequent evolution, becomes, in human persons, the advent of the first possibility of true morality, manifest, Jonas would suggest by an approach, through self-conscious rational eidetic representation, toward the objective, allowing at least partial release from the absolute dominance of self-inherence and (to put it in Frankfurt's language) first-order motivations and judgements, toward second-order, quasi-objective valuation of self, *and of other valuing agents*, and indeed the *valuing of value* itself. It is arguable that it is the valuing of value, or the evaluation of value, which opens the way to what we might describe as true *morality*. For Jonas this rapprochement of Being as self-inherence towards Being as Universal Object represents a kind of ultimate final destination, such that humanity is, in some way, the "appointed" *end* of the story of self-inherence. For him the story of the latent possibility of objective being's venture into subjective being, arising to the possibility of near-complete self-awareness in human persons represents the Universe's coming to true self-awareness, and self-valuation. Here also another peculiarity of Jonas' work manifests in what one might term a radical departure in tone and theme, into one very much of a theologically committed nature. In this pecularity, one is reminded of the sudden "turn" in the work of his old master, Heidegger, though not in terms of its quality. Apart from noting that I consider this turn to be a major failing in Jonas' work, I will leave this story to a later subsection, and continue this one with some notes about resonances in the work of some contemporary biologists.

Jonas' work may largely be considered a work of speculative metaphysics and ontology, using primarily phenomenological reasoning as its *modus operandi*. It is a philosophy of biology, and not a theory of scientific biology. However, a few years after his first major work was completed in this area, and entirely independently, a pair of biological scientists Humberto Maturana and Fransisco Varela proposed a scientific model of living systems which fits hand in glove with Jonas' beginning model of metabolism as a paradigm process. This concept was dubbed "autopoiesis":

> Maturana and Varela formulated the notion of minimal autonomy as a circular process of self-production where the cellular metabolism and the surface membrane it produces are the key terms. Thus an autopoietic system – the minimal living organization – is one that continuously produces the components that specify it, while at the same time realizing it (the system) as a concrete unity in space and time, which makes the network of production of components possible. More precisely defined: An autopoietic system is organized (defined as a unity) as a network of processes of production (synthesis and destruction) of components such that these components:
>
> 1. continuously regenerate the network that is producing them, and
> 2. constitute the system as a distinguishable unity in the domain in which they exist.[279]

The above was taken from a 2002 paper, published shortly after Francisco Varela's death, wherein he and Andreas Weber explicitly link their work and that of Humberto Maturana (co-author with Varela of the original theory of autopoiesis) with the biological philosophy of Jonas. They go on to assert that, chiefly through this link, it is possible to claim that the description of living organisms as autopoietic systems has furnished the foundational biological theory which Jonas lacked, and allows them therefore, chiefly through the work of Jonas (with some reference to the later works of Kant), to declare that the connection between valuation and biophysics has at last been made, and normativity is now firmly grounded in scientific theory:

[279] Weber A. Varela F.J. 2002. "Life after Kant: Natural purposes and the autopoietic foundations of biological individuality." *Phenomenology and the Cognitive Sciences* I: 97-125, p. 115.

> As we have said, autopoiesis has been explicitly formulated for the minimal living system, the cell. … Now, it is clearly possible on this basis to *extend* this well-grounded notion of biological individuality beyond cellular life to a fully constituted multi-cellular organism. A multicellular organism … is not in itself an autopoietic unit of the second order, since its organization does not follow the same self-constructing principles. However, a multicellular organism inherits its autonomous nature and sense-making qualities through the configuration of its neural identity. This is a matter for a long discussion that cannot detain us here; it has been discussed *in extenso* elsewhere[280] Thus when we speak here of the autopoietic tradition we not only refer to the origin of the life of the cell, but also, and by extension, to the life of the (multicellular) organisms *in toto*.[281]

Interestingly, and in my opinion demonstrating an unfortunate example of the too commonly observed disciplinary distaste of biologists for physics, Weber and Varela disdain the idea that the descriptions of the physics self-organising dissipative systems are sufficient to capture their intended and claimed connection between biological natural science and phenomenological selfhood and teleology:

> In its original formulation as well as in subsequent literature it has been customary to see the central concept of autopoiesis as just one more self-organizing mechanism (which it undoubtedly is), and even to conflate it with dissipative structure or autocatalytic cycles, or mere open systems. These ideas basically stay within the perimeter of a physicalist view of nature and understand these new developments as necessary extension of classical physics. However there is an essential difference between these views and autopoiesis: autopoiesis proposes an understanding of the radical transition to the existence of an individual, a relation of an organism with it-self, and the origin of "concern" based on its ongoing self-produced identity. One could envisage the circularity of metabolism-membrane entirely from the outside (this is what most biochemists do). But this is not to deny that there is, at the same time, the instauration of a *point of view* provided by the self construction. [282]

However I find their disdain to be more than slightly parochial, echoing the too common distrust, disdain and tribalism between biologists and physicists, and to some extent self-serving, since in the paper quoted they hope to lay claim to the title, in conjunction with

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[280] Maturana H., Varela F. 1987. The Tree of Knowledge: A New Look at the Biological Roots of Human Understanding. Shambhala/New Science Library, Boston.; Varela FJ. 1979. Principles of Biological Autonomy. Elsevier/North-Holland, New York, NY. Varela FJ. 1991. "Organism: a meshwork of selfless selves." In: Organism and the Origins of Self. Tauber AI.(ed.) Kluwer, Dordrecht.
[281] Weber A. Varela F.J. 2002. Op. Cit. note 279. pp. 115-116.
[282] Weber A. Varela F.J. 2002. Op. Cit. note 279. p. 116.

Jonas, of "Newton of the Grassblade", thus proving Kant wrong in his conjecture that there could not be such an achievement by humans.[283] While I have some sympathy with this view, in that I do consider norms and values naturalisable in very much the way that they are proposing, it appears unsporting and simply ungrateful to fail to acknowledge, and even to disdain the work of physicists in this selfsame area. For the definition of life, the foundation of biology, is most certainly to be found in physics every bit as much as it might be found in strictly biological description. The requirement of a "membrane" which separates the autopoietic metabolic system from its surrounding material is indeed an elaboration of autocatalysis or "simple" open dissipative systems, but it is not a particularly grand one. In order for systems to be able to exhibit not merely entropy reduction, in the sense of static resistance of a move towards equilibrium, but also to *act for themselves,* to have a point of activity which is the norm of their own *continuing* increase in disequilibrium, decrease in entropy, increase in Boltzmann improbability, *in active response to changes in the environment,* one could easily see a characterisation of the necessity for such inwardness and physical boundedness in strictly physics terms: in order to constitute a locus for the active reduction of entropy, the system would need to be physically separated from its environment, in order that these same activities may be themselves the target of the entropy reducing activity. The lack of such a boundary would mean that the system would be a fully open thermodynamic system, reminiscent of a complex vortex, which would forever be on the point of collapse into the background fall toward equilibrium, from which it is never sufficiently shielded to allow further complex emergent processes to arise which will themselves result in the "instauration of a point of view".[284] This latter can be restated as the construction of a system, defined and separated from its surroundings by a physical barrier allowing for valve-like control of the flow of entropy (one is reminded of Maxwell's demon)[285] which separation itself already predicates, in the necessity for opening and closing of the valves in the *right ways* in order to maintain metabolism, or definite structure, the instauration of a point of view,

[283] Weber A. Varela F.J. 2002. Op. Cit. note 279. pp. 120-121
[284] e.g. The Red Eye of Jupiter, for example, however long it lasts, will never develop the internal complexity to inaugurate a system dynamic of self-inherence or a "point of view", precisely because it is too open, too governed by the immediately surrounding system with which it is directly and in an unmediated manner, structurally coupled.
[285] As, following Norbert Wiener, it has become known. The concept is indeed rather isomorphic.

if only in the most basic of senses. This most basic of senses is simply that such activity must succeed in the structural persistence of the walled-off (as I will call it) *area of concern*. Thus biodynamic and thermodynamic modes of description can be overlaid upon one another with seamless symmetry. The claimed divergence is, I fear, a conceit on the part of the biologists.[286] However, I agree with Ezequiel Di Paolo that this in itself, this simple self-maintentance above, or simple placeholding in the stream of, the fall of entropy, is not yet sufficient to succeed in grounding teleology fully in the way that Jonas wished, which requires sense-making of the interactions between the organismal "area of concern" and its environment, including the past and future of its own states in interaction with the present and future states of the world of the "other". Weber and Varela do seem to make such a claim:

> Thus autopoiesis is a singularity among self-organizing concepts in that it is on the one hand close to strictly empirical grounds, yet provides the decisive entry point into the origin of individuality and identity, connecting it, through multiple mediation with human lived body and experience, into the phenomenological realm. These are the mediations that Jonas addresses with so much force, and makes these two lineages of thought not only contemporaneous[287] but fully *complementary.* …Autopoietic biology … provides an open link with empirical biology and thus a link to a re-understanding of teleology as intrinsic or endogenous. Bluntly stated self production is already and inevitably a self affirmation that shows the organism as involved in the fundamental purpose of maintaining its identity. … The key here is to realize that because there is an individuality that finds itself produced by itself it is *ipso facto* a locus of sensation and agency, a living impulse already in relation with its world. … In other words by putting at the center the autonomy of even the minimal cellular organism we inescapably find an intrinsic teleology in two complementary modes. First, a

[286] One perhaps bolstered by their refusal (at least in the earlier publications) to accept irreducible emergence (at least the emergence of novel physical principles, which are, by definition of their localisation, irreducible, though wholly continuous with physical nature) a in physics as a real possibility. This attitude itself can be traced, ironically enough, to the scrupulous attempt to describe autopoiesis in strictly *operational* (descriptions of the operations of physiological systems) as opposed to *functional* (description of biological events in terms of their meaning to organisms) terms, which itself can be seen as an attempt to align the early theory with the prevailing mechanistic reductionism in the 1970s and 1980s, as well as a wholly valid intention (best seen in hindsight) to ground functional language in operational language, in order to demonstrate the discontinuity between objective and subjective which they correctly believed themselves to be describing. But it should be noted that *all of these efforts already trade upon the terminology, assumptions, and methodology of physics.*

[287] Actually, Jonas preceded them here by half a decade, and they were preceded in the speculative arena in which they claim a singularity by others, as noted by Di Paolo: Di Paolo E. 2005. "Autopoiesis, Adaptivity, Teleology, Agency." *Phenomenology and the Cognitive Sciences* Vol. 4, Number 4. pp. 429-452(24) (p.429)

> *basic* purpose in the maintenance of its own identity, an affirmation of life. Second, directly emerging from the aspect of concern to affirm life, a *sense-creation* purpose whence meaning comes to its surrounding, introducing a difference between environment (the physical impact it receives) and world (how that environment is evaluated from the point of view established by maintaining an identity). [288]

Di Paolo has very carefully critiqued this claim,[289] showing, definitively in my view, that the claim made in the above quotation that a *minimal* autopoietic system would establish *both* the modes of teleology which are meant here, is mistaken. It guarantees only the former, the simple all-or-nothing value of being alive (maintaining autopoiesis) or not (failing so to maintain it) but lacks the ability to explain the latter, being the initiation of a hierarchy of systems of *sense-making* of the world, for which Jonas stated mediacy as the basic requirement. The mediacy in question, argues Di Paolo, can only effectively arise if one adds to the picture *adaptivity* as a further feature of the basic autopoietic system, which is not predicated by the original definition. In this way, the autopoietic system implies *maintenance* in the face of entropy, but it does not imply *striving of an agent*. Striving arises when adaptivity arises in a *self-assessing* system, which is synonymous with the autonomy of agency, or *freedom*, or self-direction in a value-space of positive, negative, and (crucially for systemic *development*) a plurality of *neutral* valences.[290] The autonomy in the most basic form which Weber and Varela speak of above is not agent-autonomy, it is simply *self-definition*. It is the existence of a plurality of neutral valences which makes the actions of such *para-autopoietic* systems open to self-development. But the capacity for *active* (so agent-mediated) adaptivity is the key, since if it were absent and there were mere "structural coupling" taking place between organism and environment, with simply the autopoietic arrow towards self-persistence *without "free"*

[288] Weber A. Varela F.J. 2002. Op. Cit. note 279. pp.116-117
[289] Di Paolo E. 2005. Op. Cit. note 287.
[290] At the hyper-advanced further emergent level of the person, such neutral valences widen out and become very much the ground for the creation of truly personal values which are quasi-independent from the basic valency structure. This quasi-independence is, however, not total, for ex hypothesi, even the construction of these values depends absolutely upon the continuing driver of the conatus. The argument that the very neutrality of such valences must be the ground for their independence should in turn ground such a claim, for as soon as a valence becomes antagonistic, for example, to the continuation of the person-process themselves, it quite self-evidently exits the space of neutral valence, and becomes antagonistic to the master value which allows any and all such values to obtain at all. Herein lies the existentialist illusion of radical freedom: the radically widened space of neutral valences available at the level of the (especially civilised and sheltered) person.

activity, then the systems would be wholly *objectively* determinate by direct structural coupling with their environment, and could hardly be said to have the sense-making aspect which separates them from the strictures of their environmental encounters in a definite manner which may be said to involve true *sense-making*:

> Notice that the nature of the physical coupling is always fully dictated by the laws of physics, a cell cannot change the laws of reaction and diffusion. But what is given to the organism is the parametrical control of those laws by the influence on the constraints of the coupling dynamics. … Activity, like perspective, is an asymmetrical concept. There is the actor and that which is acted upon. But just because autopoiesis establishes a self-distinct physical unity doesn't mean that the necessary asymmetry has been achieved in the domains of exchanges between the unity and its medium. Structural coupling refers to the mutual perturbation between organism and environment and this exchange may or may not subserve a tendency towards mediate conservation of autopoiesis. Only when a process is established that is able to regulate this exchange so that in general the result is an improved condition of viability, only then is it possible to speak of a true asymmetry. … Behaviour defined not as structural coupling, but as its regulation, is always asymmetrical, has an intentional structure, and can be said to either succeed or fail. It is only at this stage, when the organism behaves, that we may speak of an *agent* … i.e., a self-constructed unity that engages the world by actively regulating its exchanges with it for adaptive purposes that are meant to serve its continued viability† [Main Text] [Footnoted Text] †As adaptivity is generally not implied by autopoiesis … so agency is not implied by autopoiesis and adaptivity combined. There can be adaptive autopoietic systems where regulation is circumscribed to internal responses to external encounters without any active regulation of the conditions that affect these encounters … There can also be different degrees of agency measured by the organism's capability ot control and alter its body and environment. The transition to animality [from vegetative life-forms] discussed by Jonas is in this view a jump in the degree of organismic agency. [Main Text]… A consequence of this definition … is that the intentional structure is inevitably related to both what the organism is and what it is likely to *become* [latter emphasis added]… Adaptive regulation can properly be called an *act* in the general sense given by Langer.[291] It is a structured event, with clearly defined phases of onset (the sensing of a negative tendency), acceleration (the activation of the adaptive mechanism), consummation (the overturning of the negative tendency) and cadence (the de-activation of the adaptive response). … The form of adaptivity is such that a given stage always pre-shapes the next one without fully specifying it. Adaptive events thus have a *temporal direction* that autopoiesis (surprisingly) lacks. Being a conserved quantity, autopoiesis is also conserved if we invert the flow of time (the network of inverted reactions still maintains itself, waste products and nutrients change roles), but adaptivity (unlike robustness) becomes dysfunctional by converting safe conditions into dangerous

[291] Langer SK. 1967. Mind: An essay on human feeling. Volume I. The Johns Hopkins Press, Baltimore.

> ones which are, in this thought-experiment, fortuitously nullified by environmental encounters. … History follows from the granularity and the time-asymmetry introduced by adaptivity: the possibility of neutral valence means that certain regulative responses may compensate negative tendencies and leave the organism viable but changed, i.e. marked by the encounter in ways that constrain further dynamics. Those changes may then be reflected in the working of further regulation. The effects are propagated, eliminated, transformed or generally time-managed by sequential or hierarchical regulative events. A *historical dimension* is thus inaugurated which is not merely the contingent reflection of environmental encounters, nor is it governed entirely by an internally generated plan. … The operation of single adaptive mechanisms is in normal circumstances self-extinguishing but their interaction, the ongoing coupling with the environment, and the precariousness of metabolism, make their collective action also self-renewing, thus naturally resulting in *valenced rhythms of tension and satisfaction.*[292]

In these passages, Di Paolo (explicitly in the main text) gives what is, in his opinion, the adjunct to the basic autopoietic system which is necessary, at a minimum, to supply the ground of sense-making. It is the regulation of adaptivity which makes an agent what it is, and values which have meaning to an organism require this basic form of agency, at a minimum, to qualify as valuers in the second sense of teleology that Weber and Varela had hoped would be supplied simply by the concept of autopoiesis. Very interestingly, Di Paolo argues that autopoiesis in and of itself can only generate an all-or-nothing norm, which is then a bivalent value. Less autopoiesis, as opposed to more, in terms of the size of the autopoietic system, say, is simply irrelevant to this value. All that matters is that it is autopoietic, or not, alive, or not (if you accept the autopoiesis theory of living matter). In the above quoted passages we see that Di Paolo notes that such a value is significantly disconnected from temporality, in that it is temporally neutral in terms of direction. This has some resonances (though I wouldn't necessarily wish to go to far with this without further reflection) with my observations in earlier subsections concerning the atemporality of a strictly bivalent intrinsic value of life. The *meaning* of *continuance* to the organism in this mode is nullified, since regression and continuance of self-development of mediation are equal in value, since irrelevant, to basic autopoiesis. Simple persistence cannot supply the sense-value, or the *meaning* of life to an organism, which, by the above, I consider correct, reasoning, can only obtain in the case of an

[292] Di Paolo E. 2005. Op. Cit. note 287. pp. 12-14.

agent, which is a time- as well as a world *asymmetric* structure. Recalling our observations in the section above concerning the thermodynamic arrow of time, and considering that what is occurring in an agent which is being *successful* in following its necessary directionality of value is not mere persistence, but is *movement* through value-states by a kind of recursive ratchet as is seemingly implied by the descriptions of Di Paolo, we have in this description an apparent fit for the paw-print of the new thermodynamic principle or law of matter, at this level of emergent, self-organised complexity. As the organism evolves through ever greater levels of regulated agency, or to put it in Jonas' terms as the organism develops increased *mediacy* and self-inherence, it also develops greater complexity, but in a manner which appears to be describable as a decrease in entropy within the given bounded area described as the *total* autopoietic agent-system, and exhibits a concomitant (synonymous) increase in Boltzmann improbability. It is this increase in Boltzmann improbability that I propose gives the physics value to the extent of *risk* which Jonas speaks of in subjective phenomenological terms. Indeed, it is true that the fall toward equilibrium on death is all the more heady and dramatic, the more Boltzmann-improbable is the organism in question. In the latter manner, it seems to me that Weber and Varela are premature in their rejection of thermodynamic descriptions of the biodynamic systems in question. The directionality of agent-valuing matches, I suggest, the directionality of what has hitherto been described as the arrow of the conatus, which remains argued as an emergent and *novel* principle or law in nature which emerges as a defining condition of the emergence of agency at this structural level of the physical universe. This is the reason for Jonas' correct observation of the discontinuity between self-inherent beings (as opposed to simply self-persistent ones, which are simply autopoietic), and the rest of the world, or, to put it in the terms he uses, the discontinuity between subjective, and simply objective beings. The self-perspective of the subjective viewpoint that emerges from the background material processes is precisely coincident with the emergence of the thermodynamic arrow of the conatus. It cannot be "reduced" to the objective background without annihilating the emergent property upon which it depends, and with which it is co-instantiated.

The idea of a combination of biodynamics and thermodynamics in a necessarily (at least quasi-) irreducible (or better, emergent) manner is not new, of course, and there has been much work done, spearheaded by Eugene Yates,[293] on what appears to be just such a model. While such work is not particularly concerned with the naturalisation of value in the sense which would provide a teleological arrow for values of the morally relevant kind, it has, especially recently, moved towards a different sort of valence description, which is extremely relevant to the topic of this thesis. This is the conjecture that the degenerative mechanisms and events in aging can be cashed out in thermodynamic terms, such that aging represents a decline in the *organised* complexity of an organism, in ways which appear to map quite directly onto my arguments concerning the conatus, thermodynamics, biodynamic systems, and the good of aging intervention. There is not space here adequately to survey this cutting-edge area in modern biology, but it is important at least to mention it in passing, to give some sense of the convergence of a fairly diverse spectrum of research on this area, which is supportive of the general thesis.

While asserting that what has been said in the past few subsections is very significant for and relevant to the main thesis of this (my own, current) work, it is important for the reader not to be mislead into thinking that the thermodynamic and biodynamic aspects here described are themselves the core thesis. The core thesis is outlined in subsections 2.8 through the end of 2.9 above. It is that persons are temporally-extended processes with necessary forward-looking aspects driven by a conative aspect over which they have no ultimate control, since the latter's instantiation is constitutive of that process and therefore their personhood. This, combined with the consideration of the lack of presence of the total person at any moment of existence, and the necessarily co-dependent nature of all and any subjective instrumental value and the intrinsic value necessarily present at all times in the form of the conatus, means that persons can in no wise devalue their own continued existence. The consequence is that, for persons, their own continuation is an inalienable value.

[293] See e.g.: Yates FE. 2007. "Biological Time as an Emergent Property." In: Aging and Time: Multidisciplinary Perspectives. Baars J., Visser H. (eds.). Society and Aging Series. Baywood Publishing Co., Amityville, New York.

The empirical and phenomenological analyses performed at this stage are independent of the assertion that the driver itself, the conatus, is indeed identical with the thermodynamic arrow of a new biodynamic law, which may map onto what Yates has described as a "homeodynamic" principle of physical systems. These adjuncts to the core thesis in my opinion powerfully ground it in a naturalistic schema, and add weight and additional explanatory force to the assertions made in the core thesis. These appear to form, then, a significantly supporting and especially *grounding* adjunct to the core thesis, and to that extent can be considered a part of it, but it must be recognised that the core thesis can stand alone, for very much the reasons which Jonas gave, that the empiricism of Hume, that of *subjective* empiricism, must count as evidence just as, and in some measure independently of, the evidence from "objective" impersonal experimentation.

In the words of Di Paolo:

> We can only be speculative at this stage about the processes underlying non-metabolic teleology and the general malleability of value-generation that takes place during evolution or indeed in the "engineering of the self" that is manifested in socially mediated human projects. The important point is that the potentially workable form of these proposals follows directly from the shape of Jonas' biophilosophy proving once again its far-reaching implications.[294]

The core thesis of the work currently in hand inhabits the space gestured at in the first line of this, the closing paragraph in Di Paolo's paper, at least insofar as it relates to non-metabolic processes at the level of the person. That it connects it to the various historical and modern trends in physics, philosophy, and biology dealt with in section 2.10 generally constitutes the grounding and extension of the thesis, rather than its core.

[294] Di Paolo E. 2005. Op. Cit. note 287. p.16

2.10.6 Nature, essence, and perfection: final causal versus open processual teleologies

In the foregoing subsection we discussed Jonas' proposals for the description of a bio-dynamic teleology. In this case, the final cause is firstly the persistence (for example in a simple living, or autopoietic state), and secondly the self-development of the organism as a locus of selfhood and subjectivity, whose sense-making processes create the possibility for an ever-changing *becoming* of the self and the values and evaluative processes which define it. Insofar as this remains the picture, I am happy to go along with it. But natural teleology in the final-causal mode has a long history in which such an open-ended, even if emergent or even perhaps transcendental picture of telos represents something of a departure from the usual form. So far is this departure that I consider the use of the phrase "final cause" rather ill-at-ease with this more recent concept. The predominant tradition in natural teleology, as originating in Aristotle, and reaffirmed by the likes of Thomas Aquinas, is that the the telos of nature as a whole has final causal structure, such that *all* in nature is part of that telos, and tends toward some very *particular* end. In the case of the Abrahamic, and in particular the Thomian interpretation of telos, this ultimate destination is the reconciliation of humanity with the Divine, particularly in the supernatural eternal hereafter. In this model, then, the arrow of the telos leads through the door of death out of nature altogether, to rest at last in the bosom of Abraham, at one with the Lord. Perhaps needless to say I find this view unlikely, unwarranted, incoherent, and I generally reject it. The Aristotelian teleology upon which it was, in its most academic iterations, built holds that the *whole* of nature is teleological, literally everything is purposive: the sun shines *in order to* shed light and warmth upon the earth; the rain falls *in order to* make the plants grow, which in turn grow *in order to* feed the animals, which live ultimately *in order to* serve the needs of man. Everything, in his system, tends towards the one goal, which is the construction of Humanity, and the serving of its purpose. But what is its purpose? What is the purpose of man? The purpose of man is the life of pure philosophical contemplation, and by this also the achievement of absolute harmony in a virtue-ethical sense, being the achievement of the state of Eudaimonia, or

personal perfection. The former allows man to contemplate the eternal truths and move closer to the nature of the divine, but this is subordinate, in Aristotle's system with its turn away from Platonic idealism, to the latter, which is the ultimate final cause, the cornerstone of the Categories of Substance: the perfect man. Such is the archetype of final causal, ultimately "closed" teleologies. And such is the nature of Jonas' teleological system, also. Jonas' system is neither wholly Aristotelian, nor is it wholly Thomian/Abrahamic. It begins as a wholeheartedly non-finalistic, open descriptive system, and ends as rather a mixture of both these latter finalisms. It is not my purpose [smile] in the writing of this thesis to critique Jonas' extensive development of what I would call his neo-theistic anthropoterminalism,[295] but I must note it here, in order to define a radical distinction between Jonas' view and my own. Jonas, a processualist, nonetheless concerns himself with the realisation that the externalised supra-intentional processes of technological scientific endeavour may, in serving humanity, also sweep the very humanity away. He worries that the core of purpose of the very process itself may be being missed in the ever rushing onward of technological process itself:

> There are those who would cheer the surge that sweeps them along and disdain to question "whither?"; who hail change for its own sake, the endless forward thrust of life into the ever new, unknown, the dynamism as such. Yet, surely, for change to be valuable it is relevant *what* entity changes (if not toward what), and this underlying whatness must in some way be definable as that nature of "man as man" which qualifies the endless consummation of its possibilities in change as a worthwhile enterprise. Some image then is implied in the affirmation of change itself. But, if an image, then a norm, and if a norm, then also the freedom of negation, not only the surrender of affirmation; and this freedom itself transcends the flux and points to another sort of theory. … But if ever we entrust or resign ourselves wholly to the self-corrective mechanics of the interplay of science and technology, we shall have lost the battle for man. … Whatever the insights of that "other" theory called philosophy, and whatever its counsels, there is no stopping the use of scientific theory which propels us into the flux, for stopping its use means stopping theory itself; and the course of knowledge must not be stopped – if not for its gains, then in spite of the costs. … Theory itself has become a process, and one, as we have seen, which continually involves its own use; and it cannot be "possessed" otherwise. … Yet its very possibility implies, and its actuality testifies to, a "transcendence" in man himself as the condition for it. … This relation – a capacity, a commitment, a quest, in short, that which makes science humanly possible – is itself an extrascientific fact. … To philosophy as

[295] This is a neologism.

> transscientific theory the human fact of science can provide a clue for a theory of man, so that we may know again about the essence of man – and through it, perhaps, even something of the essence of Being.[296]

Now some of this is perfectly fine, and in line with what we might expect of a processualist, seeking some knowledge or understanding of the structure of the processes of greatest concern, and in particular human nature D3. But there is already a clear sense that what is at stake is not merely, for example, the concept of persons, but rather the concept of "man as man", or biological humanity. This has more than a whiff of substantialist thinking about it, and the use of the word "essence" in this context recalls Aristotelian substance metaphysics. The plot thickens considerably in later essays in the text, wherein it becomes clear that what is being hoped for as "Being" is not simply a Spinozist "God or Nature", or the totality of Nature D3, but rather a Deity in the more familiar cast of an Abrahamic God. Further it becomes clear that the "image of man" and the "image of Being" slide into line with the Abrahamic dogmas of "man as made in the image of God":

> I wish to choose two of those we encountered: the "Book of Life," and the transcendent "Image". … What can the symbol of the Book of Life tell us? In Jewish tradition it means a kind of heavenly ledger wherein our "names" shall be inscribed according to our desserts. … Might it not be … that what we thus add to the record is of surpassing import – not indeed for a future destiny of ours, but for the concern of that spiritual account itself kept by the unified memory of things? And that, although we mortal agents have no further stake in the immortality which our acts go to join, these acts of ours, and what through them we make of our lives, may just be the stake which an underdetermined and vulnerable eternity has in us? And with our freedom, what a precarious stake! – Are we, then, perhaps an experiment of eternity? Our very mortality – a venture of the immortal ground with itself? Our freedom – the summit of the venture's chance and risk?[297]

He has not yet made fully explicit the nature of the "eternity" he speaks of, but this is important because it indicates, as he does elsewhere, his idea and commitment that we,

[296] Jonas H. 2001 (f.p.1966). "The Practical Uses of Theory." In: The Phenomenon of Life. Northwestern University Press. pp. 208-210

[297] Jonas H. 2001 (f.p.1966). "Immortality and the Modern Temper." In: The Phenomenon of Life. Northwestern University Press. pp. 271-272

even we, now, as we are now, ourselves as humans *are the universe's ultimate experiment of self-realisation*! We are the END of the experiment. He continues:

> We turn for further advice to another simile, that of the transcendent "Image" filled in, feature by feature, by our temporal deeds. … Not the agents, which must ever pass, but their acts enter into the becoming godhead and indelibly form his never decided image. God's own destiny, his doing or undoing, is at stake in this universe to whose unknowing dealings he committed his substance, and man has become the eminent repository of this supreme and very betrayable trust. In a sense, he holds the fate of deity in his hands.[298]

With this in mind, Jonas ventures upon a kind of neo-creation myth, which has, at its surface, what might be considered to be rather Spinozistic overtones:

> In the beginning, for unknowable reasons, the ground of being, or the Divine, chose to give itself over to the chance and risk and endless variety of becoming. And wholly so: entering into the adventure of space and time, the deity held back nothing of itself: no uncommitted or unimpaired part remained to direct, correct, and ultimately guarantee the devious working-out of its destiny in creation. On this unconditional immanence the modern temper insists. It is its courage or despair, in any case its bitter honesty, to take our being-in-the-world seriously: to view the world as left to itself, its laws as brooking no interference, and the rigor of our belonging to it as not softened by extramundane providence. The same our myth postulates for God's being in the world. Not, however, in the sense of pantheistic immanence: if world and God are simply the same, the world at each moment and in each state represents his fullness, and God can neither lose nor gain. Rather, in order that the world might be, and be for itself, God renounced his own being, divested himself of his deity – to receive it back from the Odyssey of time weighted with the chance harvest of unforeseeable temporal experience: transfigured or possibly even disfigured by it.[299]

So far so Spinoza, more or less, the Immanent Nature exploring the space of the possibilities through its own modes as mediated through its attributes. Whether the Being is permanently Immanent in fullness at every moment in time or not is debatable, though Spinoza has often been considered a pantheist, however this needn't detain us, since what is coming next is more important than precise symmetries between Jonas and Spinoza, for which I am in any case not arguing. But then, while still in a mode of thinking which

[298] Jonas H. 2001 (f.p.1966). ibid. p. 274
[299] Jonas H. 2001 (f.p.1966). ibid. p. 275

broadly but unambiguously (and nearly wholly unacknowledged) owes its basic structure to Spinoza, we take a radical turn away from the naturalistic, Spinozistic world, to an account of the emergence of transcendence which is heavily overlaid with images and ideology from Abrahamic myth:

> Note also this that with life's innocence before the advent of knowledge God's cause cannot go wrong. … Every new dimension of world-response opened up in its course means another modality for God's trying out his hidden essence and discovering himself through the surprises of the world-adventure. … The ever more sharpened keenness of appetite and fear, pleasure and pain, triumph and anguish, love and even cruelty – their very edge is the deity's gain. … Thus, this side of good and evil, God cannot lose in the great evolutionary game. Nor yet can he fully win in the shelter of its innocence, and a new expectancy grows in him in answer to the direction which the unconscious drift of immanence gradually takes.[300]

And the answer? Yes, you guessed it: Humanity! But of course not just humanity, no, humanity who becomes a moral species, and introduces "good" and "evil" into the world, which is accounted to be through "knowledge" and "freedom" which have entered into the world with humanity also for the first time:

> And then he trembles as the thrust of evolution, carried by its own momentum, passes the threshold where innocence ceases and an entirely new criterion of success and failure takes hold of the divine stake. The advent of man means the advent of knowledge and freedom, and with this supremely double-edged gift the innocence of the mere subject of self-fulfilling life has given way to the charge of responsibility under the disjunction of good and evil. To the promise and risk of this agency the divine cause, revealed at last, henceforth finds itself committed; and its issue trembles in the balance. The image of God, haltingly begun by the universe, for so long worked upon – and left undecided – in the wide and narrowing spirals of pre-human life, passes with this last twist, and with a dramatic quickening of the movement, into man's precarious trust, to be completed, saved, or spoiled by what he will do to himself and the world. And in this awesome impact of his deeds on God's destiny, on the very complexion of eternal being, lies the immortality of man. With the appearance of man, transcendence awakened to itself and henceforth accompanies his doings … for can it not be that by the reflection of its own state as it wavers with the record of man, the transcendent casts light and shadow over the human landscape?[301]

[300] Jonas H. 2001 (f.p.1966). ibid. pp. 275-277
[301] Jonas H. 2001 (f.p.1966). "ibid. p. 277

Now anyone who does not see the heavy hand of Abrahamic mythology in the above passage has got to be partially blind, or ignorant of its core credos. We see obvious echoes of the myth of the Garden of Eden and the fall of man, of the purpose of Man as the reflection of God's moral purpose in the universe, of man as the "image" of God in precisely the terms of capacity for knowledge of "good" and "evil", of the awesome fate and responsibility Man holds in the success or failure of God's enterprise in his creation of the world, and his gamble in allowing the free will of Man. The one main difference is that God in Jonas' theology (for it is that) is not separated from and above the universe, so capable of direction or interference. Rather, in Jonas' world, God is actually helpless. He is rather contingently, increasingly immanent, he is the very possibility of becoming in the universe at all, which becoming is modal, and which modes are movements of the ultimate Substance towards its own self-inherence. Now I cannot but see that the core of this idea leaps straightway from the pages of Spinoza's Ethics, and yet Jonas both fails to acknowledge this, but quite straightfacedly, and in what appears to me to be the most brutally ad-hoc manner welds it together with chosen, treasured bits and pieces of core Jewish mythology, which Spinoza had of course entirely rejected as incompatible with such a conceptual structure.[302] I am simply not going to critique the theology here, other than to note that this is what it is, and not philosophy. But I must draw attention to the fact that, absent the parochial theological basis of prioritising the anthropic form, humanity, as the *pinnacle and summit, the crown of creation,* in whose sole hands rests the fate of the success or failure of the universal experiment, there is no warrant at all to consider such an idea to be anything other than exceedingly vain anthropic bias and, bluntly, chauvinism. It is the moving on from the naturalistic teleology of emergent value coincident with the necessary subjectivity of biological systems (with which I fully agree) to the ad hoc and warrantless grafting-on of universally final causal doctrine dressed with heavy borrowed robes of religious doctrine, in which the *very purpose of universal history culminates in the existence of humans as the recipients and arbiters of its appointed end* which I consider to be unwarranted neo-Aristotelian, or more properly

[302] For example, in discounting the very concept of "good" and "evil" in anything akin to their traditional robes, which old robes Jonas appears to accept or move towards with little or no real justification.

Theo-Aristotelian Anthropoterminalism. Why on earth (or more to the point, in the heavens!) should we consider that we are the sum and pinnacle of the Modes of the Absolute Substance, teetering on the edge of bringing It to full self-inherence once again!? The very language Jonas uses betrays him, for only in the presence of settled concepts of, for example "good" and "evil" could his story have any meaning at all in the first place. But there are no such settled concepts, and his own carefully constructed bio-teleology tells strongly against the bases of the theological formulations of these very same ideas. Further, as we have seen in the work of Maturana, Weber, Varela, Di Paolo, and others, there are strong reasons to take seriously Jonas' own claim that by bridging the gap between humanity and the rest of living organisms, not only were we de-sanctified, but they were enhumaned. In other words, the connection allowed us warrant to anthropomorphise, or at least to see shadows of our own prized faculties in other species. The "Santiago Theory of Cognition"[303] (similar to the system of Gregory Bateson, but lacking his, and the usual, criterion for mental representation), pioneered by Maturana and Varela, indeed goes a long way to puncturing the chauvinism of the assumption that cognition, knowledge, agency, and even morality, are the exclusive province of humanity. Human persons happen to be the most developed, in *some ways*, and *for now*, but there is nothing whatever that warrants the belief that we've reached the top of the mountain of emergent possibility. Nothing at all. For Jonas, we are on the summit, and more, we are, contrary to the spirit and function of his earlier assertions, *radically discontinuous from what has come before*. In this way, as in others which will be discussed later, Jonas betrays his own system by his inability to rid himself of the theological commitments of his youth and particular culture.

Beyond this, the philosophic conceptual basis of Jonas' purportedly processualist discussion can be questioned, for it is clearly one which is compatible with a substance idealist view of the world, in which perfection is possible, and indeed is that towards which all is moving. Now, such a vision might not be incompatible, perhaps, with a process interpretation of a Spinozistic view in which, while all was modes in process, the

[303] See: Capra F. 1996. The Web of Life: a New Synthesis of Mind and Matter. HarperCollins, London. pp. 257-267.

Total Process, Nature, is considered a Substance, and is the sole possible Substance, since it alone contains all possibilities within it, and so in some deep sense never changes.[304] This is rather mysterious, but I do find myself tempted towards it, and in this manner tempted towards a version of what Jonas has in mind, in the above passages. But this version most certainly does not have the ad-hoc Aristotelian and Abrahamic aspects Jonas bolts on. As for the Aristotelian, for a single mode in itself, to be perfectible, one would have to accept that it has a substantial essence, and not a processual essence. Processes are intrinsically imperfect. There is no suggestion of deep perfection in process, since perfection is a static unity- it is an attribute of Substance, not Process. If humanity is an end-in-itself not merely of the bioteleological or personal sort, but rather of the grand telos of universal history, such that all is purposive towards humanity's existence, as the prelude to the culmination of the great gamble of coming-to-be of the self-disintegrated deity, then at least one must first accept a version of Aristotelian substantial forms, wherein humans are just such substance-particulars. If it is not that humans are necessary, but just happen to be the conduit towards universal self-realisation, I can only say that this means that Jonas must abandon his Anthropic chauvinism,[305] such that it doesn't matter whether *our form in particular did or did not come to be, but any analogous form would do* (just as through the ages many separate species from many divergent groups have played the ecological role of lion, or hyena), but also he must abandon the idea that we hold in our hands the *immediate* fate of self-realisation of the universe. The latter just seems patently absurd, the image of an ape (not meaning Jonas himself of course, but his "image" of "man") dressed in ermine, crowning himself the Lord Steward, Regent of the Universe, the spokesman of this image pointing to an old ape-myth, and without even an understanding of the deep meaning of the terms he claims as justification (since no human has, else we are already at the end of

[304] Indeed I consider that it owes a significant debt to Spinoza, although Jonas himself exclusively references the Manicheans and the Gnostics. This is in line with the Garden of Eden story, with its nexus of the advent of knowledge of "good" and "evil", and the entrance into a "fallen" world. The concept of "fallenness", though quite differently used, is certainly present in Heidegger, Jonas' mentor, and is indeed one of the things for which Jonas critiques him. I consider this to be rather ironic in this context.

[305] However noble its originating cause, and I do think, and acknowledge that Jonas had a concern specifically to avert further atrocities as had been visited on his family during the holocaust. Incidentally, there are some further parallels in this between Spinoza and Jonas, in that Spinoza was of an émigré family who had suffered under the anti-judaic persecution of the Inquisition, in its own way as brutal, though not on anything like the scale, as the holocaust.

knowledge), if they have any. For even if there are emergent transcendences in the universe, which are truly formally irreducible, and involve wholly novel states of what might be describable as increased self-inherence (which need not involve *formal* irreducibility),[306] or perhaps some wholly new, undreamt-of realm, there is nothing particularly in this that suggests we are at the brink of the last such, or even that there may be an end to such emergent levels at all.

In short, the bioteleology described in his early work, the ontology of value in the naturalistic world, is excellent, important, and likely correct. But it does not, of itself, warrant belief in an absolute *transitive final-causal* teleology, such that there is a purposive striving of all things towards any *particular end* of self realisation, such that *particular* forms are predicated for all time, or a specific hierarchy inevitable. It is not "final causal" in any real sense, for there is no "purposiveness" about living beings, other than the ones they manufacture for themselves, in furtherance of their own being, as adaptive autopoietic negentropic living systems. But this teleology, if such it can be called at all, is a local and open ended, not a universal and finalist one, in its foundational principles. Nor does it predicate a *necessary* urge towards universal self-realisation- the return of Deity to Itself (HIMself, saliently, in Jonas' words). However, it does not rule the latter out, at least in its secular mode of a ratchet-like movement towards a kind of self-reflection of the *character* of "Total Nature D3" (Spinozistic Substance), and does fit to some degree into the picture of what might be expected of such a reality of transcendent emergence and increasing self-realisation through the layered universe, increasing self-inherence of the universal Substance, should such be the nature of reality. In this manner, the scientific process itself would be a fairly clear example or manifestation of such a movement. However, if such is the nature of reality, it does not sit well in the borrowed robes of Abrahamic myth and doctrine, and it most certainly does not warrant a Theo-Aristotelian Anthropoterminalism. We may point the way (be an arrow along-the-way) towards further, more transcendent self-awareness, and self-inherence of being, but we are most certainly not teetering on the edge of the summit. If

[306] Note that self-inherence and the concept of the conatus towards this need not involve an irreducible truly "free" entity. Spinoza has already shown us how this might work.

anything, we have barely entered the foothills of this, fundamentally Spinozistic landscape.

2.10.7 Spinoza revisited: conatus, the emergence of freedom and the nature of inherence in a multilevelled, categorically emergent universe

Spinoza's "Ethics", as Deleuze once quipped, is not his "Ontologies". It is the Ethics because it is intended, at least in part, to be a guide to action, and ethical reasoning which predisposes towards that. To be sure, the normative aspects are often apparently obscured by the overwhelming metaethical framework, which is indeed largely a matter of ontology, but they are present, and Spinoza certainly intended his work to be a guide to living a good life, a guide to a kind of true happiness. His system bears that relation at least to the Aristotelian Ethics, in that it is not intended as an enquiry into the nature of morality in terms of duty or absolute norms of behaviour, so much as it is a guide to living life well. There is not space here, nor is it in any sense the focus of this thesis to defend Spinozist metaphysics in general. Such a defense, if possible at all, would require a thorough reworking of Spinoza's system in light of advances in scientific knowledge and understanding, as well as in light of developments in philosophical metaphysics itself. Some conceivable starting points for such amendments have already been noted in subsection 2.10.2 above. A further one will now be added to this set, which will be further elucidated in section 2.10.8 below. This is that Spinoza's system was fully deterministic. His conception of "freedom", whose augmentation was central to his ethics, was restricted to a compatibilist notion, wherein a true or correct understanding of our motivations, values, and the sources of our grief and happiness would lead us to a kind of transcendental awareness of our own determined condition, which state of secondary awareness would allow us to consider our actions, while thoroughly determined, to be ours in the sense of our being the adequate cause of them. Thus our happiness will consist in bringing our rationality into line with our emotions, and vice-versa. Once this has occurred, we cease, he contends, to be ruled by our passions, and become "free" of them to the extent that we are ruled by our rationality. Our passions attain the aspect of being "active", whereby we live in rational harmony with them, rather than "passive" whereby we live in continual rational disharmony with them. He accounts

the latter to be the true source of unhappiness. Further, our rational awareness of the fundamentality to and within us of the conatus of striving towards self-persistence, and more than this, towards self-*inherence* (about which latter more below), would not only lead us to greater felicity as our affect and rationality come into alignment, but also would allow us to participate more closely with what he termed the "adequate ideas" which are the true forms of conception, best considered as true reflections of the nature of the eternal Substance. In this manner, Spinoza is very much in the tradition of the Stoics, however, he did not exalt reason to the extent that they did, contending that reason cannot wholly overcome the affects, but rather can only dissolve the negative effects of their influence in the attainment of "adequate" ideas of their origin and nature.

Given his doctrine of the fundamentality of the conatus, for Spinoza the highest good is the preservation of being in accordance with reason or adequate ideas, which itself promotes the furtherance of such adequate ideas in a process toward ever-greater knowledge of Substance. This latter knowledge he referred to as "knowledge in the third degree", and the nature of this knowledge is precisely the knowledge of Nature, the knowledge of the full range of causes of a mode or modes, extending towards knowledge of the infinite such range. In fully adequate knowledge of the modes of Nature, the mind attains to knowledge of eternal forms, or essence. It would probably be fair to say that the kind of knowledge he is referring to may be described as knowledge of the nature D3 of Nature itself. It is in the possession of this kind of knowledge that the mind participates in eternity, and to that extent, is eternal, or immortal.

Spinoza's commitment to determinism, however, was ironically founded upon an *inadequate* idea of Nature, and to that extent he lacked knowledge of Nature D3. This in itself should not have shocked even him, let alone Spinozists, since he himself declared that the possession of a full set of adequate ideas or moreover knowledge of the third kind of Nature (D3), was impossible for merely finite beings, which we irrevocably are. In any case, just as Spinoza can have had no knowledge of entropy, and the true nature of the laws of motion of non-living bodies, being inertia, not conatus, he can have had no

knowledge nor the slightest inkling of the startling and paradigm-shifting revelations awaiting the venturers beneath the Democritan substrate of the atom: the quantum world.

Despite Einstein's staunch defense of thoroughgoing reductionist determinism, [307] and indeed partly because of it,[308] the macroscopic, deterministic realm of Einsteinian-Newtonian physics was found to stand upon, or rather emerge from, a subatomic realm of at least partly *indeterministic nature*. This knocks out one of the core assumptions of Spinozistic ontology. But what if this radical emergent discontinuity in the laws of the physical universe were not the only one? What if further emergences were possible above this level? Indeed, what warrant at all would we have to conclude that there *weren't* any such? As will be discussed in subsection 2.10.8 below, the picture of the universe as in accord with radical reductionism is, if not in tatters, in a fair degree of quandary. What appears to be emerging as a new scientific and ontological paradigm, is that the universe may be intrinsically *layered*, with irreducible discontinuities emerging as it progresses through stages of magnitude, both in terms of energetic and spatial scale, and also systemic complexity. If there exists, as now has become all but dogmatic, such a radical discontinuity involving precisely the nature of causation, between the quantum and the macro-scale worlds, then, given especially the possible emergence of a new thermodynamic principle at the level of complex dissipative systems, insofar as they become autopoietic, and thence *actively* alive, then why should we suppose it *impossible* that, along with this may come an emergent further discontinuity may come at the level of causation, such that subjective beings, and especially those who have second-order, self-referential processual subjectivism with a range of neutral valencies nearly always available, may perhaps one day be accounted, in line with commonsense, to be truly possessed of a freedom of the will. In this, I consider that the approach of theorists such

[307] It is noteworthy that Einstein considered Spinoza to be among his guiding philosophical inspirations.
[308] Since Einstein's own experimental structure which he asserted would disprove the Bohrian "no hidden variables" Copenhagen interpretation of data from quantum-scale measurements, the EPR (Einstein-Podolsky-Rosen) apparatus, later known as Bell's theorem (since it was the Irishman John Bell who first successfully tested this construct), when finally constructed and tested instead of proving Einstein right about quantum-level determinism, did precisely the opposite, confirming instead the Copenhagen interpretation. See: Bell JS. 2004 (f.p. 1987). Speakable and Unspeakable in Quantum Mechanics. Cambridge University Press.

as Roger Penrose,[309] with his appeal to the concept of brain-mediated access to quantum indeterminacy, hits upon the fact of the radical discontinuity between the subatomic and macroscale, but likely makes the wrong inference, which is that in order to achieve freedom or its analogue, we must *descend* the emergent layeredness, rather than simply noticing that this pointed-to discontinuity may mean that in having *ascended* this layeredness, we may have simply attained, in the very instantiation of our being as living, subjective, person-processes, the borderline of a wholly new causal structure, one of freedom. Of course I deny entirely Penrose's or any idea that the indeterminism of the quantum world is in any case what we want when we speak of freedom, which it isn't, and can't be. Further I should note that freedom in itself is in no way crucial or necessary to the core thesis expressed in this dissertation. Rather, a close reading of the same will reveal that it rather militates *against* the claim to radical autonomy or freedom of the will that is championed in some liberal concepts of the person. In this way, it tends *towards* a classically Spinozist account. But the fact simply remains that the assumptions upon which radical reductionist determinism were founded have turned out not to be as profoundly stable as was once thought. The point is that we should at least bear this in mind when attempting to answer such questions as: What is life? What is consciousness? What is a person?

Such conjectures, while remaining wholly conjectural, at least have the merit of plausibility. Without the warrant supplied by the existing radical causal discontinuity, which is now widely accepted, one may not easily accept, and indeed may feel compelled to reject the commonsense view outright. This is the case for Spinoza. I can only account it a great shame that Spinoza himself did not attain, because of historical strictures, to the level of adequacy of ideas, but more correctly, to the level of knowledge of the third kind of Nature D3, which we presently have. It would have been interesting to see how he might have adapted his system accordingly. One major consequence might have been that he would find himself with no further use for the concept of Neutral Monism of Attribute Dualism, whereby the attributes of "thought" and "extension", corresponding to "mind" and "body" are parallel but separate attributes of existing modes. However it is not our

[309] Penrose. R. 1999 (f.p. 1989). The Emperor's New Mind. Oxford University Press.

purpose here to examine this difficult question, and re-jigging such a delicately balanced system as his geometric Ethics is, would require perhaps decades of dedicated work.

But it is reasonable to state that it is perhaps unlikely that such a prospect- an emergent, layered universal reality, would have troubled rather than delighted him. If Don Garrett is correct,[310] for example, and very relevantly to the topic of this thesis, that the troublesome and mysterious subclause "insofar as it is in itself" in Ethics III, P6: "Each thing, in so far as it is in itself, endeavours to persevere in its being", refers to the self-inherence of the mode, whose self-inherence tends towards that of the ultimate self-inherence of the total Substance, then such an emergent picture may well appear very compatible indeed. One need only consider the sorts of arguments put forward by the likes of Jonas, Maturana, Varela, Weber, and Di Paolo, concerning the *progressive* "inwardness" and "self-inherence" of living systems, as guaranteed by their increased *mediacy*, first away from and then returning towards true objectivity, to see the resonances between such concepts and the Garrett interpretation of a Spinozistic system. It is noteworthy that a significant target of the criticism of Garrett's inherence interpretation of Spinoza's conatus argument is grounded in counter-examples drawn from non-living systems, such as stars, candles, and bombs, which obviously contradict the stipulation given in the Ethics, part three, proposition four. Garrett spends a great deal of effort in seeking to reach an interpretation which gets around this difficulty, without abandoning its universality. If Garrett and other Spinozists were to recognise the function of Spinoza's ignorance of modern developments in matters of entropy, inertia, emergence, and causal determinism; if they were to accept my arguments about the Conatus' necessary return to its ancient and true frame of reference, the living world, emergent as it is, and discontinuous with the non-living precisely in that the conatus obtains, then a truly workable Spinozistic theory may possibly emerge from a reconsideration of his old template, in accordance with this increase in the adequacy of knowledge. This is especially so in view of the fact that my interpretation of the conatus is absolutely *not* a kind of supernatural *vis viva* or *élan vital*, but rather is a function of the entropic arrow itself, and just as life cannot proceed in absence of the second law, since metabolism and other functions would be impossible,

[310] As set forth in his recent and influential paper: Garrett D. 2002. Op. Cit. note 66.

the conatus *depends upon* the existence of that law, so it constitutes no counter-example to the application of proposition 4 to living systems. I do not, however, seek to defend proposition 4 wholeheartedly, and I remain sceptical of it. Further, it is not in fact a fundamental or even necessary aspect of the conception of value and personhood which I am putting forward in this thesis.

In closing this subsection, it is not entirely premature to suggest that such a reworking may well result in a view of a renewed imperative of Spinozistic conatus towards increasing self-inherence, adequacy of ideas, and knowledge D3 of Nature. Such an imperative itself may reveal an unfolding of further layers of emergent reality, making what is possible within the universe far more open-ended than has hitherto ever been conceived possible in a Naturalistic monism. Such a vision is far more extensive, open, and inductively probable than is the anthropoterminalistic view that we are, ourselves and in our present state and state of knowledge, the final cause of all universal purpose, or at one single remove therefrom.

2.10.8 Objectivity, reductionism, and emergence: a note on the nature of the Universe, and of the sciences which endeavour to describe it

Reductionism is true. But very likely it is not the *whole* truth. It is clearly correct that regarding phenomena at each level of the universe, from the cosmic to the macroscopic to the molecular to the atomic to the subatomic, to the Planck scale and at every level within this non-exhaustive list, there is a dependency relation of the "higher" more energetic interactions and phenomena, to the "lower", less complex, less energetic (*in totam*, though not necessarily on their own scalar terms, which sometimes increases dramatically as size scales descend), and smaller level below, and so on down. In this way, I hold it true that if there were suddenly a universal shift in the value of some atomic or quantum-scale characteristic, it would have a universal effect, and would radically change many or all aspects of the worlds "above". This reductionistic holism, and the broad dependency relation it represents, is reasonable, and compelling. At times, however, it has led physical scientists to go a little too far in their claims. Much work in Twentieth Century in physics was directed at the end of finding a unified "Theory of Everything", uniting Quantum Mechanics with Einsteinian Relativity, and all physical forces in one grand equation. String theory was a hoped for candidate, but hope for this appears to be waning, as the number of possible string theories increases towards levels of absurdity and it is realised that much of the theoretical aspect will never be testable, and therefore will never rise to the level of actual empirical science[311]. Some, such as the Nobel Prize-winning condensed matter physicist R.B. Laughlin, have gone so far as to suggest that this project may be formally impossible,[312] arguing for a strong emergentist view of physical reality. Others, such as the Nobel Laureate physicist P.W. Anderson have argued for a weaker version of emergence,[313] but one which is, in practice, no less critical of the strong claim to attainability of the reductionist holy grail- the constructionist hypothesis- that given

[311] Kauffman S. 2006. "Beyond Reductionism: Reinventing the Sacred." The Third Culture. Available at: http://www.edge.org/3rd_culture/kauffman06/kauffman06_index.html [Accessed February 2008]
[312] Laughlin RB., Pines D. 2000. "The Theory of Everything." *PNAS* Vol. 97, no.1, pp. 28-31
[313] Anderson PW. 1972. "More is Different." *Science*, New Series, Vol. 177, No. 4047, pp. 393-396

reduction, it will *in fact* be possible to describe all phenomena at each level of the universe by appeal to such a fundamental theory.

Strong emergence essentially is ontological emergence. It states that, as one progresses upwards through levels of complexity, scale, and energetic interaction, one encounters wholly "new" properties or laws that are formally irreducible, meaning formally incalculable from below (so, from a full understanding of properties and laws at a lower, or fundamental level) in a way which would deny the famous conjecture by Simon de Laplace in the introduction of his Essai, commonly known as "Laplace's Demon".[314] Such properties require, in turn, the elucidation by means of new laws, which are equally formally incalculable from below. This form of emergence denies the hard reductionist, "theory of everything" model outright, as being a simply incorrect picture of universal ontology.

Weak emergence essentially is epistemological emergence. It states that, as one progresses upwards through such levels, one encounters properties that are in principle calculable, if one were a la Laplace to posit an *infinite* calculating capacity, but are in fact pragmatically incalculable from within any one universal history, rendering them in practice wholly conjectural. In the latter case, hard reductionism and the theory of everything, with the potential for a *constructivist* account of all possible and actual states from these basic laws and properties, may respectively be formally true and possible in principle, but the latter construction from one level to the next, especially in a *predictive* capacity, is formally *unknowable* in reality.

While a discussion concerning the relative merits of either position might be interesting, it seems clear that for *practical* purposes, the difference between them is irrelevant.

There are some systems biologists who hold out hope for a truly accurate calculability of biological processes, starting with a truly representative *in silico* model of a cell, which

[314] Laplace PS. 1814. Essai Philosophique sur les Probabilités. Courcier, Paris; Available at: http://www.tektonics.org/classics/laplaceprob.pdf [Accessed February 2008]

may then dispel talk of emergence altogether, at least at *this* level, revealing it to be merely a contingent present heuristic.[315] But this kind of approach seems to ignore the more general lesson that the *apparent* phenomenon of emergence in the apparently ontologically layered universe, with its apparently striking examples of symmetry-breaking and emergent properties, offers us. This lesson, surely, is that whatever we may think we know presently, it is unlikely to be anywhere near the whole story, and the whole story as it unfolds will always retain the capacity for, *qua our epistemic capacities*, radical novelty, whether strongly emergent, or no. If, and here are some big "ifs" the universe is indeed layered as it *prima facie* appears to be, with the quantum giving way to the macroscopic, and the macroscopic, perhaps, giving rise to the psychological realm (so *perhaps* indeterminism -> determinism -> freedom of "will" -or at the very least, consciousness, self-regulating agency, and the reality of conscious valuing agents, or persons), *then what gives us warrant to suppose that the story, the layeredness of the universe with its unfolding spectacular novelty will end at this level?*

Whatever else is true about the nature of the universe, and of our scientific heuristics in attempting to understand it, it is not unreasonable to think that startling novelty of either the ontological or epistemological variety remains an inductively *probable* feature of the universe, such that layers *above* the one to which we have attained, with startling new properties and perhaps attendant new laws await our discovery. Teleology may take the forms of a *final causal* model, following Aristotle, with a fixed, closed destination, but also may take an open-ended form, with the telos an arrow pointing through to worlds and realms beyond, to new layers of possibility, meaning and purpose within this, our universe. The conatus is neither a Summum Bonum, nor does it appear that it is a teleology of ends, or final causal teleology, in which there is a fixed end. In the works of Aristotle, this end was that of man, and the highest virtue of man, the Eudaimonic man, the highest good of all. Towards this end, according to Aristotle, did all of nature bend. Rather, agreeing with (a perhaps reformed) Spinoza, at least until the self-inherent being

[315] Westerhoff HV., Kell DB. 2007. "The methodologies of systems biology." In: Systems Biology: Philosophical Foundations. Boogerd FC, Bruggeman FJ, Hofmeyr J-H S, Westerhoff HV. (eds.) Elsevier, Amsterdam; Snoep JL., Westerhoff HV. 2005. "Silicon Cells." In: Systems biology. Eds. Alberghina L, Westerhoff HV, Springer, Berlin

has attained to the level of parity with absolute Substance, the telos of the conatus is intrinsically open-ended, and, given an acceptance of a non-hard-reductionistic, layered natural realm, with emergence a reality,[316] tends towards the perhaps open-ended upward layering of the possible in the natural universe. We may agree also with Jonas, insofar as his quasi-Spinozistic story of the self-reconstruction of Substance is represented by the increasing self-inherence of modal living beings is concerned. However, we may, and I argue must disagree with Jonas in his acceptance of a neo-Aristotelian anthropoterminalism, or anthropic-finalism. In the above ways, hard reductionism, with its hubristic assumptions of a nearly complete final discovery of all, may well be a wholly incorrect method of viewing the world, and we may yet find that the bio-teleological arrow of the conatus points us toward an ever distant horizon of the possible, and towards a truly naturalistic transcendence.[317]

Very much more could be said than there is space for here, of course, but I will close Section Two with a caution and an exhortation. The caution is that we must be careful not to view a naturalistic system of ethical origin with wholly reductionistic eyes, when considering normative principles. That there may be some emergent law which predicates and governs self-organised dissipative living systems, and that that this law has operated in accordance with strictly Darwinian principles hitherto prior to the emergence of self-conscious rational agents, tells us in itself but little of the particular further structures such complex emergent beings have and will continue to project upon the world in terms of value, however driven ultimately by this master value. Our eyes must rather look both to the level we find ourselves at now, that of seemingly free valuing agents capable of culture transcending brute Darwinian principle, whose values are phenomenally real features of the world, to be examined and considered at their own level, and not solely through the lens of the levels which gave them rise, and indeed towards other, more transcendant levels still. In this way, Hobbes' insight, and that of modern evolutionary theories of ethics, while instructive and, I believe, likely correct *insofar as they go*, cannot give us a *fully normative* sense, or better, should not be thought of as *governing*

[316] Whether ontological or epistemological, but to us, de facto.
[317] For a description of the category of persons as being a transcendent category itself, see Ruiping Fan's paper on the subject: Fan R. 2000. Op. Cit. note 165.

and therefore *limiting* the development of our moral present or indeed *future*. They may perhaps rather be best seen through the lens of non-linear self-organising systems, whose outcomes are either formally or informally unpredictable. In this way, we arrive at something akin to an emergent moral particularism, but crucially not one without a guide. The guide is the arrow towards self-persistence, and the increase of self-inherence, provided by the emergent (whether and in whatever manner reducible or no) principle of the conatus. This leads, in turn, to the exhortation, which is that we should not consider our own present situation to be in itself the end of the story. The arrow which brought us to this place, which drove us to the emergent reality where we now dwell, while not binding us to the early principles, values and exigencies of our developmental history, indeed does point and *urge* us towards that unknown horizon, whose possibilities beckon with the subtle promise of transcendence of whatever nature, whether formally or informally discontinuous, nonetheless new. In the words of Rossetti:

Think thou and act; to-morrow thou shalt die
Outstretch'd in the sun's warmth upon the shore,
Thou say'st: "Man's measur'd path is all gone o'er:
Up all his years, steeply, with strain and sigh,
Man clomb until he touch'd the truth; and I,
Even I, am he whom it was destin'd for."

How should this be? Art thou then so much more
Than they who sow'd, that thou shouldst reap thereby?
Nay, come up hither. From this wave-wash'd mound
Unto the furthest flood-brim look with me;
Then reach on with thy thought till it be drown'd.
Miles and miles distant though the last line be,
And though thy soul sail leagues and leagues beyond,--
Still, leagues beyond those leagues, there is more sea.[318]

[318] Dante Gabriel Rossetti, The House of Life: 73, The Choice, III

To which we may perhaps ask in response, and in his own spirit: tomorrow, shalt thou die?[319]

[319] By this question, I mean to question the inevitability of death in the classic frame of aging, to which Rossetti was undoubtedly referring, as well as to point to unknown possibilities, and not to some confused concept of attaining to supernatural immortality, which can only exist, as I have argued, in the supernatural realm (Horrobin 2006. Op. Cit. note 254). Of course, while not retreating from this assertion, in the open spirit of the exhortation, I may say- who *knows*?

Section Three: The Procrustean Lifespan: Person-Processes and the Personal Condition

3.1 The personal identity of person - processes

A great deal has already been said, in Section Two, on the subject of personal identity. Much of the focus of this has been upon the question of substantial identity, which was comprehensively rejected with relation to persons. The rejection of substantial identity has significant advantages with regard to concerns about personal identity. At one level, that of *intrinsic* sameness, in the sense of *identicalness*, the problem simply evaporates, since there are no persons who are identical in this mode to themselves from *any* T1 to *any* T2. If they were, they should not be processes. To that extent, person-processes are without identity, for identity *in this mode* is itself a substance concept. With this realisation, many of the apparently pressing questions about what constitutes personal identity through time, insofar as they refer to intrinsic identity, simply disappear- there are no such beasts! But the question at hand, of course, is not whether persons have intrinsic identity through time, but whether self-identity is the sole basis for self-concern about the continuation of the process, or the existence the future person-process that the present one might eventually become. And further, if it is not, then what can be the basis of such concern, which must underlie any project to extend lifespan, by however small or large an amount? I consider that the arguments given in Section 2.8 through 2.10 above, resolve much of this issue, for it is demonstrated that *concern* for the future self is part of what is constitutive of persons at all, and *becoming* is itself the constant and defining feature of that process. The very idea that persons are processes whose very existence is dependent upon a basic value-structure, whose core feature is valuation of persistence of the regulated adaptive autopoietic process itself, and through the development of the

regulative faculties, which core value of striving towards self-persistence and adaptive self-*development* extends fully through the psychology and indeed the whole ontology of person-processes, itself addresses this question full-on. If there is no substance to persons, if persons therefore lack temporally-extended self-*identity (sameness) by definition,* then a question about why we should be concerned about intrinsic self-continuance *on the basis of sameness* is both empty, irrelevant, and *in any case would apply, if at all, to the person-process at all moments of its existence.* If such a question had any force, then, in view of the person-process conception of personhood, it would deny that there was any basis for such concern *at all*, even from one hour to the next in any ordinary lifespan. Of course, this would be to ignore the fact that the person-process view itself explains the value of continuance as being indivisible from the existence of persons at all, and further predicts and holds as its core principle, the idea that persons do not possess the kind of identity that is worried about. Still, some questions might remain, particularly about whether the *extended* person-process is something about which our limited person-processes should be concerned. We can perhaps appeal to the ongoing debate in this area for some framework on which to hang this question.

Derek Parfit is a theorist who has dealt very extensively with the issue of personal identity and personal survival through time. His theory is best described as a reductionistic Lockean concept, whereby all that is necessary for persons to obtain are particular kinds of psychological states, such as thoughts, memories, desires, intentions, etc., and that the body and brain are supportive of these, but do not in themselves constitute a necessary relation to them. If the relevant thoughts, memories, desires, etc. survive without the body or brain (perhaps in a computer), or with replacement by other body/brain arrangements, then the person survives. Parfit performs an analysis whereby two candidates for survival are tested, the *psychological continuity*, and the *psychological connectedness* criteria. This analysis begins with the stipulation that what is important to survival shall be considered to be some relation, which he terms relation "R". Provided that relation "R" obtains, survival obtains. The first candidate, that of the criterion of psychological continuity, states that what is important to survival must be identity, and, having already rejected substantialist conceptions of identity, but wishing to retain a

"sameness" concept nonetheless, that identity must consist of continuity of certain psychological features, including intentions, desires, and the like, but chiefly memory, since it is held to be of prior importance (else these others will not be said to obtain). Provided that these psychological features are held to be continuous, then, according to Parfit, identity (at least to the extent that is ordinarily meant) obtains. Continuity is thus transitive, and is an all-or-nothing, one-to-one relation. It is said to obtain when any set of psychological connections, which are strongly causally connected psychological events held by both the person P1 at T1, and the person P2 at T2, are held to obtain, at least in some part. Thus psychological continuity involves overlapping chains of strong connectedness. But, using a thought experiment originating with David Lewis, and involving deep time, and a collection of immortal "Methuselahs",[320] it is conjectured that, while a young Methuselah at 50 may share a significant connectedness with a still younger Methuselah at 12, the later Methuselah at 300 may share but little psychological connectedness with the 50 year old Methuselah, and nothing at all with the 12 year old one. Eventually, it is held, in such cases all connectedness is erased, and the simple fact of continuity can no longer support the idea that identity is what matters in survival, since no identity of the important kind remains. He uses imagined cases of branching, fissioning, and fusing further to bolster this idea, conjecturing that while it is possible to conceive of each half-hemisphere of a forebrain to be successfully transplanted into separate individuals, such that some connectedness obtains from each resultant individual to the former, then it is possible to say that something significant survives about which the former, whole-brained individual might be justifiably concerned, but it is impossible to ascribe identity to *both*, since this results in absurdity. Using such thought experiments (whose practical improbability, not to say glibness is a signal hallmark of Parfit's work),[321] Parfit goes on to argue that it is clear that, counter-intuitively to commonsense,

[320] Lewis D. 1976. "Survival and Identity." In: Philosophical Papers. Oxford University Press, New York, NY. pp. 55-77. Parfit D. 1987 (f.p. 1984). Reasons and Persons. Oxford University Press.

[321] For example, in glossing over and simply failing to refer to any role that the brain stem and cerebellum, but most particularly the part of the brain stem known as the "pons" which literally means "bridge", and whose function is precisely to connect the various parts of the brain, including the hemispheres, might play. Part of this failure to mention the connection of each hemisphere of the forebrain to these structures may involve his eagerness to assert that the hemispheres are really "unconnected" in such cases, when all that has been severed is the corpus callosum, which, while apparently very important, is certainly *not* the *only* important connection between the hemispheres. To this extent, the "split brain" cases he considers are not, in fact, "split brain" at all. Also, his example of what he calls the "combined spectrum" which involves a

identity is not what matters in survival, but rather continuity of strong connectedness, with the right kind of causation.[322]

Before continuing with a discussion of this topic, one thing should be noted about this general schema. Following David Lewis and Parfit's[323] examples of this supposed problem, it has become almost an assumed dogma, referenced in many publications on the subject of survival, the nature of identity and also the issue of its role in radical life extension, that such a picture is indeed based in some analogue of reality. Consider this example from Reichlin and Barazzetti:

> While it is certain that, at the age of 270, my R-related successive self will retain no memory of my interests and life concerns at 50, he/she will have memories of a previous self aged 220, who in turn had memories of a previous self aged 170. In this way, it may be that sufficient overlap between successive selves obtains, in order to justify continuing egoistic concern.[324]

However, as has been noted, this is pure, even wild, conjecture, as there are no examples whatever to base such assertions upon. On the other hand, there is good evidence to suggest that this pattern of memory-formation, recollection and forgetfulness may not be what would occur in reality. The Parfitian-Lewisian schema involves something like a

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thought experiment whereby neurons are progressively *and singly* inter-transposed between brains, resulting, so he asserts, in a gradual shift between persons, is simply a false picture of the functioning of neural networks. He treats such networks as if they were *modular*, with interchangeable parts that could be rearranged like Lego blocks. But the thought experiment simply fails because the smooth interchange *would simply not occur nor be possible in reality.* This assertion does not depend upon practical issues, such as the ease of such surgery, but upon principled issues, such as the nature of brain connectivity, and its *development,* which is absolutely not modular, between persons. Only the gross structures are (and then only vaguely) modular. The particular arrangements which make one person a particular person, and not another person, simply cannot be smoothly reconnected, alive, into a wholly different self-organised structure, and at the same time maintain their original characteristics, undistorted. His thought experiment seriously distorts the nature and character of brain neurophysiology to achieve its aim, and while he might say that it is "only" a thought-experiment, this experiment *trades upon a biological plausibility.* If it did not do so, one ought not to bother speaking of "brains" at all, nor ought one to reference *real-world cases in support of the defended hypothesis.* See: Parfit Ibid. pp. 236-243.

[322] The idea that causation is in fact necessary to the connectedness he has in mind has been interestingly challenged. See: Cambell S. 2005. "Is causation necessary for what matters in survival?". *Philosophical Studies* Volume 126, Number 3, pp. 375-396

[323] Lewis D. 1976.; Parfit D. 1987. Op. Cit. note 320.

[324] Reichlin M. Barazzetti G. 2007. "Life Span and Personal Identity." Enhance Project. Second International Workshop on the Extension of Life Span, Faculty of Philosophy, Vita-Salute San Raffaele University (Publication forthcoming 2008)

container, or surface upon which objects are placed, the container or surface, say shelf, representing memory, and the objects being what is remembered, or else and as well as attitudes, intentions etc. that are had by the person at any given period of psychological continuity. The shelf being of a certain fixed extent, as it moves through time and new memories, thoughts, intentions etc. are "placed" upon it, old ones "drop off" the end, or are replaced in some way by the new. But this seems to be a rather "hand waving" picture of psychological and neurophysiological reality. To be sure, the brain is a physical object of a certain extent in space. It is the most complex object known, but it is not infinite. So one might be tempted to agree with such conjectures out of brute commonsense. Of course, one can note that it may very well be that suitably modified brains (ones simply that do not age in the normal trajectory, let alone ones which have been modified to increase memory penetrance and duration, as has apparently been achieved in mice[325]), will not exhibit such a pattern, or will have greatly extended "shelves", such that the problem will not manifest for very long periods indeed. But equally it may very well be that quite ordinary human brains can retain R-relatedness for very much longer periods than has been supposed.[326] But "ah," say the thought-experimenters, exploiting infinity once again, "one may always specify a greater and greater period until eventually it becomes impossible that the brain could gain information [as we shall for convenience characterise memory, intention, desire, and the like; - although not all desires, *ex hypothesi*, are informational in nature[327]] without losing any, and therefore, without losing the connectedness of its R-relation altogether over time". But what warrant do we have to suppose that the brain, our present psychology, indeed works like this? It has long been known that at least in the aging brain, new memories become more and more difficult to form. This would of course be dealt with by any aging intervention which allowed for the continuance of a fully healthy brain for great periods, as is assumed by all such thought experiments, but what is often missed is that another peculiarity of memory loss in the aged is that they frequently exhibit a closer connectedness with the experience

[325] Tsien JZ. et al. 1999. "Genetic enhancement of learning and memory in mice." *Nature*; 401; 6748: 63-9
[326] As is suggested by the remarkable memory cases such as that of "AJ" (so referred to in the psychological literature to protect her identity) who seems to be able to remember nearly everything that has ever occurred to her. See e.g.: Foer J. 2007. "Remember This." *National Geographic*, November Issue. Available at: http://ngm.nationalgeographic.com/ngm/2007-11/memory/foer-text.html [Accessed February 2008]
[327] e.g. The categoric desire of the conatus.

of vivid memories, feelings, and affects *from the most distant region of their psychological past*, that of early to mid-childhood, often to the exclusion of those from the middle periods of life, and despite the fact that during those middle periods, much of the resurgent memories could not easily be accessed.[328] This fact, glossed over and ignored by the moving-shelf theorists (as I shall call them), appears to suggest a far more complex picture of connectedness than does the neat shelf-concept employed by Parfit, Lewis, and others in examination of these questions. For it appears as though, for *actual* very long lived persons, far from becoming progressively *less* connected with their past selves, they indeed experience a disconnect of this form mostly in the middle years, but as they age become rather *more* connected with their earliest past selves. A possible correlate of such an observation appears to underlie, at least in part, what Williams and Karel Capek had in mind in *The Makropulos Case.*[329] We shall deal with this kind of objection later, but it is worthy of mention here, because it seems to reference a worry which is diametrically opposed to the one in question, which worry is that characters, or persons, far from infinitely capable of novelty, such that the worry will be *loss* of R-relatedness, will be radically *in*capable of this. In such a case, the *character* of a person is held to be more or less constant, such that whatever the turnover of thoughts and intentions etc, in deep time the person will exhaust all possibilities within themselves, being tethered to this stake of fixed character. In such a case, it would seem that the worry that we may change fundamentally appears rather luxurious, and might appear more as a *solution* to the real problem confronted in cases of radical life extension, rather than being the source of the problem itself. In this way, we have an apparent dilemma. I shall deal with the Charybdis of the supposed problems of *fixity* and *sameness* of character further below, and return in this subsection to the Scylla of the possible failure of such.

Returning to Parfit's view, it should be recognised that such a view apparently provides a reason why we should not worry particularly about the loss of identity over time, since

[328] Timiras PS. 2002. Physiological Basis of Aging and Geriatrics. CRC Press Inc; 3Rev Ed edition. See esp. table on p.127.
[329] See below at subsection 3.4.

according to Parfit, this is not what matters in survival, in any case.[330] On this view, then, it would be perfectly rational to be concerned about the survival of persons who are not ourselves in terms of identity, provided they were sufficiently R-related with ourselves. Parfit makes this clear in examples of replication by "teletransportation", wherein the original copy is R-related to the resultant copy, but cannot be identical to them since they are wholly separate. It is stipulated that the copying process has damaged the original's heart such that they will die shortly, while the undamaged R-related copy will survive, providing the necessary criterion of *some* overlap between.[331] In this case, argues Parfit, it will be rational for the original to have concern for, and find some comfort in, the survival of the copy.

Glannon and others have raised the objection that while such examples may work for our near-term, strongly connected concern, in the case of radical prolongation of life[332] such an eventual lack of connectedness, however, will result in such a complete break with ourselves now, that we have no reason to harbour prudential concern for survival in this fashion.[333] Harris has replied[334] that it is quite rational that we should have concern for such apparently disconnected persons, since our very *concern* may be transitive, such that person A has concern for the survival of person B, since they are sufficiently connected to warrant strong R-relation, and likewise person B to person C, and this relation of concern is itself sufficient to warrant the assertion that person A should have egoistic concern for person C. The same idea is referenced in the Reichlin/Barazetti quote above,

[330] It should be noted at this point, as well, that the concept of persons as conatively driven processes appear compatible with such a view, as Parfit's is a kind of process view in its own right, although it does not seek to explain just what it is that makes continuation of existence to persons good *at all*. This, as well as questions about what might be driving the process itself, are simply assumed: there is a process, and it is good to be a person with certain future-directed concerns.

[331] Parfit D. 1987. Op. Cit. note 320.
[332] In Glannon's case, the prolongation is remarkable mainly for its *shortness*, for he speaks of "virtual immortality" at the age of 200. This seems really too short a period to confer such a profound difficulty. There are Bowhead whales which have been known to survive for well above 200 years, and the longest lived human, Mme. Jeanne Calment, lived to within 78 years of this figure. See subsequent note.
[333] Glannon W. 2002. Identity, Prudential Concern, and Extended Lives. Bioethics Vol. 16, Number 3, pp. 266-283
[334] e.g. Harris 2004. Op. Cit. note 101.

and similar arguments have been put forward by others in support.[335] I have to add at this point that the worry itself seems to trade upon some notion of sameness which equivocates between process and substance, such that, while in such a picture persons appear to be very much *like* processes, this is not really taken seriously, and instead of being "analogue" as a person-process will be, sliding through time as an ever-changing, intrinsically forward-driven and continuous *becoming*, the image which is relied on is very much "digital", with talk of "person P1 at T1" and "person P2 at T2", *as if at these points, the whole person were instantiated in a unitary, rather substance-like manner.* I suggest that if we are to take the concept of persons as processes seriously (and *explicit* process-thinking has been surprisingly lacking in the Parfitian camp, and within the discourse relating such ideas to life extension), then we must consider that such digital, unit-based logic is simply inappropriate. We do not, then, have a nicely *complete* P1 at T1, and *another* nicely *complete* P2 at T2, or any *series* of iterations in between, we have, rather, an extended process, such that there are *never* any strict delineations which would warrant talk of *series*, as though each unit in the series had a distinct centre, which was fixed at a particular time, and from which we moved away, until eventually we can talk about a wholly different point in the series, which then forms a centre for talk of a further, *separate* person. The person, in this way, is simply *not* a series, but a *continuous process.* The person is never, at any particular time, complete, but is rather intrinsically incomplete and open-ended. In this way I think that such talk of iterated *series* persons may simply be a misleading category error, trading on an illegitimate conflation or confusion between persons as processes and persons as substances, arising from a failure fully to realise or take seriously the implications of a person-process view. If what has been said above in Section Two is correct, about the constitutive nature of the compound forward-directed value to persons, then this continuous person *will never lose the value of their own continuance.*

Laying this analysis to one side for the moment, it will be useful to return to and more fully to engage with the debate surrounding Parfitian ideas of personal survival, since

[335] Schloendorn J. Making the Case for Human Life Extension: Personal Arguments. *Bioethics* 2006; 20: 191-202.

there is in any case a further aspect to the concept of persons which appears to deal just as effectively with this worry. To begin with, it should be noted in passing that Parfit's model, which *only* references the survival of Relation-R and nothing whatever about the *particular agent* or *self* in question, is compatible with cyborg or more pointedly "mind-uploading" concepts of life extension, wherein what matters, Relation-R, is simply the *information*, or *data* of the memories, plans, intentions, desires, etc., and not the particular information *processor*, or agent. In this way, survival could conceivably be constituted in the representation of this data in a sufficiently functional computer substrate, which, given the near infinitely modular capacity for memory addition and storage, would appear to obviate further concerns about the loss of connectedness at all, by making the "shelf" of memory indefinitely extendable.[336] I should note that I am not a subscriber to this view of life extension, partly because it remains conceptually very nearly wholly unproven (and, given Chalmer's p-zombie problem[337] applied to the issue of other minds, especially egregious in the case of minds *in silico*, where the physical basis of purported consciousness is radically different from that of the biological context, may perhaps remain so forever), but partly on other grounds, which I shall begin[338] to address in what follows.

While it may be noted that Parfit's view of what matters in survival, along with his view of persons, is broadly compatible with a view of persons as processes, and probably even of persons as conatively-driven processes, I consider that there are grounds, if not for rejecting it wholesale, then at least for modifying its conclusions to account for a feature which he essentially entirely discounts, and which may turn out to be more important for what matters in survival than anything else which may be said about R-relatedness of mere information. This relates to the concept of information insofar as information, on one view at least, is *meaningful* (indeed definitively so) only in the presence of *one who*

[336] According rather well with Parfit's apparently modular concept of the mind, as demonstrated in his "combined spectrum" thought experiment.
[337] Chalmers D. 1996. The Conscious Mind: In Search of a Fundamental Theory. Oxford University Press.
[338] It is not the purpose or focus of this thesis to address "mind uploading" and the question of whether hard AI will in fact turn out to be correct, in terms of not just the modelling of minds and persons, but their actual *instantiation* in computer programs. A discussion of this would understandably require a great deal of discussion in the philosophy of mind, much of which is oblique, though not irrelevant to, this thesis. In any case, it would require a book-length treatise in its own right.

is informed, and *who processes* that information, modifies it, and is to some extent also modified by it. In short, the account Parfit gives, essentially discounts the existence of agents, and true *selfhood,* by insisting that his view of persons may be understood and considered in an *entirely impersonal manner.* He characterises the situation with regard to persons in an absolutist manner as a strict dichotomy with only two possible resolutions, the personal substantialist, and the *impersonal* Reductionist modes:

> I claim that a person is not like a Cartesian Ego,[339] a being whose existence is all-or-nothing. A person is like a nation … On the Reductionist View, personal identity just involves physical and psychological continuity. As I argued, both of these can be described in an impersonal way. These two kinds of continuity can be described without claiming that experiences are had by a person. A Reductionist also claims that personal identity is not what matters. Personal identity just involves certain kinds of connectedness and continuity, when these hold in a one-one form. These relations are what matter. On the Non-Reductionist view, personal identity is what matters. And it does not just involve physical and psychological continuity. It is a separate further fact, which must, in every case, either hold completely, or not at all. Psychological unity is explained by ownership. The unity of consciousness at any time is explained by the fact that several experiences are being had by a person. And the unity of a person's life is explained in the same way. These several claims must, I have argued, stand or fall together.[340]

Further, he makes it absolutely clear that he intends not that there may be other views, but that there are likely no other views possible:

> … I believe that I have now considered those views that, in this debate, need to be considered. I may be unaware of some other published view. And I have not considered views held in different ages, or civilisations. This fact suggests a disturbing possibility. I believe that my claims apply to all people, at all times. It would be disturbing to discover that they are merely a part of one line of thought, in the culture of Modern Europe and America. Fortunately, this is not true. I claim that, when we ask what persons are, and how they continue to exist, the fundamental question is a choice between two views. On one view, we are separately existing entities whose existence must be all-or-nothing. The other view is the Reductionist View. And I claim that, of these, the second view is true. As Appendix J shows, *Buddha would have agreed.* The Reductionist view is not

[339] This is Parfit's paradigm case of substantialist identity.
[340] Parfit D. 1987. Op. Cit. note 320. p.275

> merely part of one cultural tradition. It may be, as I have claimed, the true view about all people at all times.[341]

To help to make clear what he is getting at, here, it is useful to quote Appendix J in full:

> At the beginning of their conversation the king politely asks the monk his name, and receives the following reply: 'Sir, I am known as "Nagasena"; my fellows in the religious life address me as "Nagasena". Although my parents gave (me) the name "Nagasena" … it is just an appellation, a form of speech, a description, a conventional usage. "Nagasena" is only a name, for no person is found here.
>
> > A sentient being does exist, you think, O Mara?
> > You are misled by a false conception.
> > This bundle of elements is void of Self.
> > In it there is no sentient being.
> > Just as a set of wooden parts,
> > Receives the name of carriage.
> > So do we give to elements,
> > The name of fancied being.
>
> Buddha has spoken thus: 'O Brethren, actions do exist, and also their consequences, but the person that acts does not. There is no one to cast away this set of elements and no one to assume a new set of them. There exists no Individual, it is only a conventional name given to a set of elements.'
>
> *Vasubandhu*: … When Buddha says, 'I myself was this teacher Sunetra', he means that his past and his present belong to one and the same lineage of momentary existences; he does not mean that the former elements did not disappear. Just as when we say 'this same fire which has been seen consuming that thing has reached this object', the fire is not the same, but overlooking this difference we indirectly call fire the continuity of its moments.
>
> *Vatsiputriya.* If there is no Soul, who is it that remembers? *Vasubandhu*: What is the meaning of the word 'to remember'? *Vatsiputriya.* It means to grasp an object by memory. *Vasubandhu.* Is this 'grasping by memory' something different from memory? *Vatsiputriya*. It is an agent who acts through memory. *Vasubandhu.* The agency by which memory is produced we have just explained. The cause producive of a recollection is a suitable state of mind, nothing more. *Vatsiputriya.* But when we use the expression 'Caitra remembers', what does it mean? *Vasubandhu.* In the current of phenomena which is designated by the name *Caitra*, a recollection appears.

[341] Parfit D. 1987. Op. Cit. note 320. p. 273.

> The Buddhist term for an individual, a term which is intended to suggest the difference between the Buddhist view and other theories, is *Santana*, i.e. a 'stream'
>
> *Vatsiputriya*. What is an actual, and what a nominal existence? *Vasubandhu.* If something exists by itself (as a separate element) it has an actual existence. But if something represents a combination (of such elements) it is a nominal existence.
>
> > The mental and the material are really here.
> > But here there is no human being to be found.
> > For it is void and merely fashioned like a doll.
> > Just suffering piled up like grass and sticks.[342]

In all this it becomes clear that what is being discussed is a *bundle theory* of persons, very much akin to that spoken of by Hume, who also used (and probably initiated) the analogy of a nation (more properly, in his terms "a republic or commonwealth"), and further denied that there was anything more to be said about persons than that they were a bundle of such phenomena as sensations, impressions, intents, affects, etc. and that there is no further fact about them that can be pointed to.[343] But is this strict dichotomy a fair representation? Is it as absolute as he asserts? There is a significant body of work which references another position, which can be called the *selfhood* conception of persons, in which it makes sense, and can only make sense, to talk of persons in terms of the *agency* of persons, wherein there is not *merely* a process *simpliciter* of such things as the information experienced in the consciousness, but *also* a higher-order description which is indispensable, and maps onto the higher order activity, which must be located in a process of agency, and the self, being the *experiencer*[344] of that which is experienced, and the *author* of actions. This may, and I think does, supply another conception of the nature of the unity of persons which does not fall into either of the camps described by Parfit's strict dichotomy.

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[342] Parfit D. 1987. Op. Cit. note 320. pp. 502-503.
[343] Hume D. 1990 (f.p.1740) Op. Cit. note 28. Book I, Part IV, Section VI. pp. 251-263.
[344] I will discuss the analysis in terms of agency, but the flipside of agency is experience. For an agent to be the author of their action, they must also be the one who experiences both the precursors of that action, which give a range of valencies from which a course of action may be considered, further projected and enumerated in planning, and subsequent to deliberation, chosen. In this way, the agent must experience, whether consciously or not (allowing for minimalist understanding of agency) themselves in the world, as a subjective selfhood, whose subjectivity is guaranteed first by the self-inherence of the living system, but secondly by the mediacy between self and world, as described by Jonas and discussed in section two above.

This view does not, according to proponents such as Korsgaard,[345] involve *some further fact*, which necessitates the existence of a homunculean or other substance concept, but rather may be described in wholly practical terms. In order that we may speak of what is going on in the course of a person's life, we must be able to deal with the *authorial* aspect of a person's actions, higher order desires, affects, decisions, etc. Far from merely flowing through unimpeded and unaltered, as through a simple conduit, the phenomena in passage through time and consciousness within a person, are affected by some *regulative* process, which bends, changes, and *chooses between valencies* in order to determine a course of action. Korsgaard identifies various levels of this activity. Firstly, there is the fact that a multiplicity of motivational streams may exist at one time, corresponding to a multiplicity of valences in and between possibilities in the world, and states within ourselves. These may simply be different urges or opinions, or desires, or, as in Parfit's example, which she references, cases where the very hemispheres of the (fore) brain are separated.[346] In all these cases, it is a matter of practical exigency in a unified body, that *one such* shall prevail, else the body/brain should cease to be able to function to continue itself, which it nonetheless manifestly does in such cases. As a result of this unity of agency, the purported disunity in such cases is only apparent with specific diagnostic tests, and would not be apparent to any ordinary observer, who would see a unified course of action taking place. Secondly, there is the pragmatic existence of what she calls the "deliberative standpoint":

> The idea that you choose among your conflicting desires, rather than just waiting to see which one wins, suggests that you have reasons for or against acting on them. And it is these reasons, rather than the desires themselves, which are expressive of your will. The strength of a desire may be counted *by you* as a reason for acting on it, but this is different from *its* simply winning. This means that there is some principle or way of choosing that you regard as expressive of *yourself*, and that provides reasons that regulate your choices among your desires.

[345] Korsgaard CM. 1996. "Personal Identity and the Unity of Agency: a Kantian Response to Parfit. In: Creating the Kingdom of Ends." Cambridge University Press, Cambridge. pp.363-397.

[346] But not, as has been noted, the *whole brain.* And as a result these are not *truly* separate in the sense of being neurophysiologically disconnected- a fact which Parfit chooses to ignore. I will go along with this false conception in any case, since even in its presence the case for agency can be effectively made. If so, then how much more strongly so when we remember that the hemispheres *actually remain connected in a unified brain in the cases Parfit references.*

> To identify with such a principle or way of choosing is to be "a law to yourself" and to be unified as such. This does not require that your agency be located in a separately existing entity or involve a deep metaphysical fact. Instead, it is a practical necessity imposed upon you by the nature of the deliberative standpoint. … It is practical reason that requires me to construct an identity for myself; whether metaphysics is to guide me in this or not is an open question.[347]

Now at this point I am going to draw a fairly bold parallel between what Korsgaard is talking about, and something that has been extensively discussed in the latter stages of Section Two above. This is the concept of the self-inherent agency of material systems of a self-regulating autopoietic, free-energy dissipative, negentropic, conative kind. Korsgaard's language, I believe, maps rather beautifully onto the language of Di Paolo in his interpretation of the self-regulating adaptivity of autopoietic systems, as being *agency*, and of course Weber and Varela begin the title of the seminal paper referred to above: "Life After Kant". I of course recognise that, being a somewhat more traditional Kantian, Korsgaard is perhaps likely to disagree that fairly simple systems at the level of, say, an amoeba, or an earthworm, can indeed possess such deliberative agency as she here intends.[348] However this may be, and it does require acceptance of a kind of "all the way down" interpretation of cognition as proposed in the "Santiago Theory of Cognition",[349] it can be recognised that, even where it can be denied that such systems have *self-conscious* eidetic control of neurophysiologically-mediated cognitive processes, cannot make life-plans or radically novel forms of second-order cognitive endorsement of desire, and so may not be accounted to be *persons*, they are indeed deliberating between options available, and making *unified* decisions for *action*,[350] therefore they are *agents* in very much the manner (in terms of the unity of agency) that Korsgaard here speaks of.

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[347] Korsgaard CM. 1996. Op. Cit. note 345. p. 370.
[348] Although being a constructivist, she may not.
[349] See Capra F. 1996. Op. Cit. note 303.
[350] One may consider the deliberative stance necessarily taken by an amoeba when making the choice with regard to action between this and that item in its environment, in terms of which to move towards, and which away from, which to pursue as food and which to avoid as threat, and given various such options which is the *best* one. Even an amoeba must co-ordinate its fairly extensive hierarchy of processes in a remarkably complex manner in order to accomplish such tasks. What one observes when watching the motility of amoebae is not just a concatenation of wholly random vectors, resulting *ad hoc* in a direction of movement, whereby the strongest, or the resultant vector wins; rather one observes *a coordinated stream of movement across the whole organism*. A startling and striking example of the centeredness of such agency, which in my opinion strongly supports an agent-centred conception of the evolution of cooperative normative systems in groups of organisms, is found in the dictyostelid slime moulds. These are organisms

Now, this kind of unity, or identity of self, is a pragmatic point identity of agency. It is identity, but not in a substantialist mode, since it does not require that there is anything which does not change through time, and indeed, requires that everything does, even the agent as subject themselves, for, as Di Paolo has noticed, the pragmatic decision-making of the unified agent will constrain its future possibilities, and will even feed back to the structure of the agent itself, such that its very *character* (and so, nature D3) will evolve, through time. This leads us back to the question of *continuing* identity over time. It is at this point that Korsgaard takes a big stride towards full realisation of the concept of a person as a conatively driven process, without actually alighting on the concept itself:

> Perhaps it is natural to think of the present self as necessarily concerned with present satisfaction. But it is mistaken. In order to make deliberative choices, your present self must identify with something from which you will derive your reasons, but not necessarily with something present. The sort of thing you identify yourself with may carry you automatically into the future; and I have been suggesting that this will very likely be the case. Indeed, the choice of any action, no matter how trivial, takes you some way into the future. And to the extent that you regulate your choices by identifying yourself as the one who is implementing something like a particular plan of life, you need to identify with your future in order to be *what you are even now.* When the person is viewed as an agent, no clear content can be given to the idea of a merely present self.[351]

This strikingly echoes aspects of the analysis of persons as processes given above in Section Two. Korsgaard goes on to accept that this means that agency may not solely be predicated of single persons, but may also be so of groups, or any group which, for pragmatic reasons, requires itself to act as a unit. She refines Parfit's bundle theory description of persons as "nations" with the concept of persons more as "states"- not

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capable of switching between incorporate beings, being fully embodied in a single corporate whole, and individual forms, capable of independent motion. The incorporation into a self-acting single whole, as well as the threat-response of the group as separate entities, appears to be mediated through a single agent locus, that of the originator or founder of the colony. In this manner, one is also reminded of such eusocial living systems as termites, or most saliently marauding ants exhibit, which form colony structures or bivouacs out of their very bodies. Such systems *importantly transcend* the simple boundaries of the walls of the physical body, and open the way to interpretations of organismic entropy-reducing systems which operate between bodies and in groups, giving room for realistic talk of normative systems governing the behaviour of groups of individuals developing from the simple fact of the entropy reducing self-inherent regulated adaptive dissipative structure that is definitive of a living organism.

[351] Korsgaard CM. 1996. Op. Cit. note 345. p. 372,

merely an ad-hoc, accidental bundle, but rather a deliberately constituted grouping whose identity "for practical reasons, must be regarded and treated as more determinate than the identity of nations." Continuing, she states that:

> …the pragmatic character of the reasons for agent unification does not show that the resulting agencies are not *really* necessary. Pragmatic necessity can be overwhelming. When a group of human beings occupy the same territory, for instance, they have an imperative need to form a unified state. And when a group of psychological functions occupy the same human body, they have an even more imperative need to become a unified person. This is why the human body must be conceived as a unified agent. As things stand, it is the basic kind of agent.[352]

One can see, in this passage, the beginnings of a rather Hobbesian notion of the emergence of nation-states, which is not, as has been noted, at all incompatible with, and may be predicted by the core thesis, in conjunction with thermodynamic considerations. I of course am going to disagree that the human body is the basic kind of agent, while I can still agree that it is, at least very nearly, and with the possible competing candidates of the likes of dolphins, and the great apes,[353] the basic kind of *person*-agent. More basic agents are predicted, and described, by autopoietic theory, and the pragmatic exigency which urges them into existence, and greater self-inherence and unity, is the same which ultimately forces the composition of nation states: the fact of the second law of thermodynamics. Increased order, increased states of improbability, is what microorganisms, nation-states, families, and manufacturers of aircraft are all about, though with differing *boundaries of concern,* and the achievement of this is made difficult (and also possible at all!) by the second law, which forces the requirement of those very boundaries, at all. I am going boldly to suggest that the very construction of moral norms and rules themselves, results not merely from the whimsical projection of affect-valuation upon the world, as is suggested by non-cognitivism, nor solely from the self-conscious cognitive rational deliberation of persons with their wonderful eidetic self-control, but rather is constituted much more basically by the self-organising principles governing pragmatic behaviour within particular groups in given situations, when

[352] Korsgaard CM. 1996. Op. Cit. note 345. p. 373.
[353] See e.g.: Wise SM. 2000. Rattling the Cage: Toward Legal Rights for Animals. Perseus Books, Massachusetts.

increased order and increased states of statistical improbability are required within given bounded spheres of concern.

Returning from a general metaethical consideration to the particular topic of this subsection, however, we may see that there are grounds to consider it a matter of pragmatic truth that there is a continuing unity of agency in a person, particularly when persons are considered to be processes with certain core features, which in turn are determined by the exigencies of physics: the bounded, conative process of regulated, adaptive, self-construction.[354]

When we consider that this agency has a characteristic signature at any one time, a particular *character,* which has at least a moderate persistence, such that while it certainly changes, it usually changes rather slowly, we can begin to see how a concept like Paul Ricoeur's one of the *narrative* identity of selfhood,[355] is useful in understanding the continuity of agents through time. In the narrative mode, persons are agents who both inaugurate and formulate life plans, or prolonged, structured and cohesively organised courses of action, in which they play necessary leading roles, and who in turn are subject to these plans, and in the course of them, are shaped by eventualities along their narrative history. The shaping and self-transformation can often be deliberate, and may indeed be the very *point of the story or plan*. This is true, for example, of the plan picked out by an intention to go to university, say to *become* a doctor, or more generally simply to experience a character- and life-*changing* immersion in unfamiliar ideas, or to join the Air Force and *become* a pilot. Each of these picks out an intentionally chosen narrative structure, or plan, with the transformation of the self, at least in part, and in the middle case in whole*, as its intended outcome*. This matches rather well with similar observations made by Christine Overall,[356] in context specifically of issues of fixity of

[354] It is not, perhaps, so surprising after all that there may be significant parallels between Korsgaard the constructivist, and a theory of adaptive self-construction.
[355] Ricoeur P. 1990. Oneself as Another. Blamey K. (trans.) University of Chicago Press, London.
[356] Overall C. 2007. "Life Span Extension: Identity, Gender, and Moral Character." Enhance Project. Second International Workshop on the Extension of Life Span, Faculty of Philosophy, Vita-Salute San Raffaele University (Publication forthcoming 2008); Overall C. 2003. Aging, Death, and Human Longevity: A Philosophical Inquiry. University of California Press.

character, and the boredom which is supposed, by some, to result therefrom, as will be further discussed below.

I consider that the unity which Ricoer and most particularly Korsgaard want is a unity of self-inherent *processes*. In this way the identity is in no way a *substance* concept of some unchanging metaphysical entity, such as that exemplified by Parfit's reference to a "Cartesian Pure Ego". But nor is this identity the mere identity of Relation-R. It is an identity of selfhood, and agency, which arises from what is in one sense a purely reducible schema, *but in another the reduction of which would miss the important and interesting features of such processes*. Living systems are not *mere* processes, reducible to the point of indistinguishability to the background of processes of the universe in general. Rather, they are *precisely* self-distinguishing, self-inherent processes, whose activity of self-distinction is constitutive of their unified nature, as separate from the background objectivity. I will note in passing the further and independently supporting argumentation for this which can be found in a perhaps unexpected quarter: that of the substance ontologist Peter Van Inwagen, who contends that living organisms are indeed the sole unities of complex matter in the known universe, with all other complex objects simply being accidental bundles, whose existence is indeed simply conventional, and nominal in nature.[357] That he describes them as substances is no matter, and is more to do with his prior commitments, than any deep fact about the beings he describes, which are properly described as unified, self-*inherent processes*. We even may go so far as to say, given arguments and observations above in Section Two, that this latter is likely a matter of physical fact, not in that personhood or agency involves some further fact *beyond the physical processes of organisms themselves,* but at least in the sense that it picks out systems which are factually different from other types of systems. There is no further fact *hidden inside* living systems, rather living systems represent the further fact themselves *in totam*, in being living at all. In this way, to attempt to state, as do the Buddhists in Parfit's Appendix J, that a person, or a living being, is *nothing other than* a bundle of simpler things, is to miss out a crucial and defining aspect of the nature of these physical processes: that they necessarily self-inhere in order to maintain their form, and act in the

[357] Van Inwagen P. 1995. Op. Cit. note 148.

course of their *becoming* more Boltzmann-improbable, *by the self-establishing and self-regulated activity of their own internal processes,* as driven by and co-constituting the conatus whose pragmatic urgency is derived from the necessity of separation from the fall toward equilibrium as given in the Second Law. To state that something may be reducible in the sense that it may be *understood in terms of* subsidiary constitutive factors,[358] is not to say that we may ignore what is then and thereby constituted. In this way I flatly deny the sense of both Parfit's and (apparently) the Buddhists' oversimplistic understanding of reductionism, since it obstinately ignores what is manifestly the case: that, whether formally reducible or no, there is a phenomenon of a certain *character* or type, whose character *categorically* emerges from, supervenes upon but is not identical to, the subsidiary characters its mere constituent parts. To state that an atom is *only* a bundle of subatomic particles, is to ignore the special physics that extends from the level of the atom on upwards, and *differs in character and category from the physics of the subatomic world*. To state that a painting is *only* some pigments suspended in a substrate of long-chain carbon molecules, is likewise to miss what a painting is, over and above its constituent parts. I argue that the same (though more likely closer to the scale of difference picked out in the former example, since the latter depends upon the existence of person-agents in any case) may be said of living, versus non-living processes, of agent-processes versus simply autopoietic systems, and of persons versus simple agents. In this way, this insistence on the reducibility of an organism or worse, a person, to *just* a process, *like any other in every respect,* which is therefore strictly analogous to a non-living process like a bundle of sticks or whatever else, constitutes a categorical error.

[358] Though to be sure we are very far from doing this, in anything but the vaguest of ways.

3.2 Mortality, person-processes, and the existential personal condition

In his famous 1946 lecture "Existentialism is a Humanism", Sartre declared

> Man is nothing else but that which he makes of himself. That is the first principle of existentialism. And this is what people call its "subjectivity," using the word as a reproach against us. But what do we mean to say by this, but that man is of a greater dignity than a stone or a table? For we mean to say that man primarily exists – that man is, before all else, something which propels itself towards a future and is aware that it is doing so[359]. Man is, indeed, a project which possesses a subjective life, instead of being a kind of moss, or a fungus or a cauliflower. Before that projection of the self nothing exists; not even in the heaven of intelligence: man will only attain existence when he is what he purposes to be. Not, however, what he may wish to be. For what we usually understand by wishing or willing is a conscious decision taken – much more often than not – after we have made ourselves what we are. I may wish to join a party, to write a book or to marry – but in such a case what is usually called my will is probably a manifestation of a prior and more spontaneous decision[360].[361]

Here Sartre is very close indeed to a discussion of the subject matter of this dissertation. In many ways, I accept the thrust of this passage, and its description of what has been termed the "human…", though for the purposes of this thesis, the "*personal* condition". But there is one aspect in which I believe Sartre to be mistaken, or at least confused, and indeed the matter is significantly blurred or glossed over in this passage. This is whether persons, as Sartre appears to have it, "propel" (or "hurl" in Frechtman's translation) *themselves* toward the future in some *fundamentally* subjective sense, for which they as persons are then *wholly* responsible, as he appears later to suggest, or else whether they at

[359] For useful comparison, Frechtman's translation differs slightly, but carries an enlightening slant in this context: "For we mean that man first exists, that is, that man first of all is the being who hurls himself toward a future and who is conscious of imagining himself as being in the future." From: Sartre JP. 1957. Existentialism and Human Emotions. Frechtman B. (trans.) Philosophical Library, New York, NY.

[360] For useful comparison, Frechtman's translation again: "Because by the word "will" we generally mean a conscious decision, which is subsequent to what we have already made of ourselves. I may want to belong to a political party, write a book, get married; but all that is only a manifestation of an earlier, more spontaneous choice that is called "will.""

[361] Sartre JP. 1989 (f.p. 1946). "Existentialism is a Humanism." Mairet, P. (trans.) In: Existentialism from Dostoyevsky to Sartre. Kaufman W. (ed.), Meridian, London.

least in part and at base are *propelled*, by the very thing which he is describing (in Frechtman's translation) as a "will". I believe that Sartre was skating across the, admittedly difficult to disentangle, boundaries between cognition, affect and conation. If so, I assert that he is wrong to suggest that there is some "decision" (Mairet) or "choice" (Frechtman) in the matter, at least, of fundamental *propulsion of self*. Rather persons are helplessly and inevitably propelled towards the future by the very process that makes them persons at all. In this way, Sartre was right at one level, that it is something inherent in ourselves as persons that does the propelling, and perhaps that persons may be secondarily responsible for some of these drives, when they rise to the level of affects or, more pointedly, cognitive constructs, but wrong at another, since the basic driver of personhood is not something that is open to subjective, second-order *re*-evaluation. The "will", described as *prior* to "wish" or plan, is deeper, prior, and "more spontaneous" than the decisions or choices Sartre more generally speaks of in his work. I believe that in these above-quoted words Sartre was feeling his way towards the idea of conation, and a conative driver of the person, without wishing, however, to surrender the notion of radical freedom or autonomy, the basis of the responsibility that was central to his conception of the existential predicament, and ethic. In this way, Sartre and I disagree on the level of autonomy that persons have over their own natures, but we seem to agree that conation indeed gives rise to and motivates other desires, wishes, and later, plans towards these, and further wishes based upon such cognitively-constructed plans[362]. On this adjusted view, the *personal* condition[363] is indeed still a predicament, for surely what we feel in view of our mortality is a sincere and profound existential problem, a dissonance between what we inevitably as beings *are* and what we know to be our inevitable fate.

And what are we to make of this helplessness, in relation to life-extension, and its value, if it is indeed accepted that we are unavoidably *mortal* beings, however long we may live? For us, helplessly future-projected beings, the difficulty is *ex hypothesi* never alleviated, so long as we are persons. Perhaps this, or something like it, is what lay

[362] So Korsgaard's constructivist ethics, taking place as it does, in the "heaven of intelligence", is on Sartre's view also only secondary to this motivation.
[363] For there is a crucial difference between the set of humans, and the set of persons, and it is very much the latter that the personhood as process view regards.

behind the Aurelian assertion that since we are all mortal, the timing of death is not important:

> If any god told you that you shall die tomorrow, or certainly on the day after to-morrow, you would not care much whether it was on the third day or on the next, unless you had a very degraded spirit for how small is the difference? So think it no great thing to die after as many years as you can count rather than tomorrow.[364]

I consider that while this latter has some sense at one level, its force is not complete, and that it does indeed make a difference to us. Of course, one answer is that it matters to us what our own subjective purposes are, and in this instrumental way it is important whether we die, for example, before we feel them to be fulfilled. In this way, Aurelius' assertion seems to empty all such personal purposes, life plans, or values of *any* purpose or value, in very much the kind of oversimplistic reductionist spirit I rejected in the last subsection. But further, I think that this kind of thinking trades upon a fallacy of equivocation since it seeks to address one question, which obtains at one level, but does so by appealing to an entirely different level, where the question, the matter of interest itself, simply doesn't obtain in the first place. The apparent warrant for the equivocation lies in the fact that the matter of interest, say, the concerns of the self, lie *within the scope of* the more general and abstracted level, say the whole history of "Nature", so this is a kind of merelogical appeal. But I think that it fails, precisely because it fails to respect the reality of the boundaries between the levels of the very categories or sets which must exist in the mereology referred to. Nature is indeed monistic, but it is not *simplistic* and without internal complexity. Why should we feel, *qua ourselves*, that it is "no great thing" that all of *our* purposes are devalued in this way? If we, as the Stoics often liked to do, in common with some Buddhists, and some reductionist philosophers such as Parfit, seek to quiet our concerns of selfhood, or our selfhood-predicated concerns to the point of their annihilation, by contemplation of "the grand scheme of things" or objective realms and processes *from which we arise* as subjective beings, are we not doing so in an illegitimate manner, since we thereby do not *address* the question posed at the level of the self, or the person, but rather simply sidestep it, by abstracting to the point that our

[364] Aurelius M. 1964. Meditations. Stanforth M. (trans.) Penguin Classics, London. Book IV, XXXVII. P.74

perspective shifts and the self or the person simply disappears from view? This form of "quietening" seems more like *stifling.* It seems to be a somewhat ostrich-like principle. One may imagine an astronomer, who has discovered a comet on a collision course with earth, who solves the problem and quietens his disquiet simply by refocusing his telescope on the distant stars and galaxies beyond, and out of context of, the problem that immediately troubles him. To be sure, the comet and the earth both lie in the grander mereological realm of concern in which the stars and galaxies beyond also lie, and may vaguely or *abstractedly* be appealed to as somehow, in the "grand scheme of things" more significant, perhaps since greater and more enduring, but this is simply to fail to respect the boundaries which make sense of any of it at all, and most particularly the concerns of the person who is the astronomer themselves. Seen this way, the life plans and values of the person *must* be addressed qua *themselves*, not qua some level of reasoning or ontology that causes us to lose our grip on the very meaning or ontology of persons, *at their own level*. But beyond this, at the deeper than simply instrumental, but still very particular and not abstract, level of the conation-driven person-process which gives rise to all such concerns, mortality, especially in a rigid "given" frame, remains a pressing problem, which still must be addressed.

3.3 Some symmetries and false solutions

In a post-hoc manner, after formulating the initial persons-as-process view with regard to the value of life extension, I noticed some similarities between certain aspects of this view, and the view described in the core Buddhist text known as the "Four Noble Truths". In this text, and in its later philosophic elucidations, it is asserted that desire is what predicates suffering, and desire is fundamental to persons. The project of Buddhism, in one sense, is to free the subject of this suffering by freeing the subject, ultimately, of their very personhood, or rather by dissolving our belief in the selfhood of subjectivity at all, by analysis of persons as *nothing but* a bundle of sensations, thoughts, affects, etc. in process. The purpose of the "eightfold path" is to quiet particular desires or affects, and that of meditation is to allow, eventually, a kind of "first-hand" insight into the purportedly illusory nature of personhood, such that personhood, and the constitutive desire that propels it, along with the affects which form the furniture of "samsara", or the game of personal life, and indeed the "becoming" of all life, evaporates, or is "snuffed out" in nirvana[365]. The causes of future-directed coming-into-being, thus the personhood itself, and indeed all causation of drives or one thing to another, indeed process, in this manner ceases altogether on attainment of nirvana. It should be noted that the precise nature of the "goal" of this religious practice is very obscure. The Buddha Gautama famously declined to define Nirvana, saying only that it was not existence nor was it non-existence, nor was it existence and non-existence, nor was it neither non-existence, nor existence. In the face of such a denial, and in the absence of my own access to "nirvana", I can only note that the Buddha continued in fact to live, breathe, and to teach, act, move, urge, cajole, attempt to persuade etc., after the purported attainment of this condition. This may mean that nirvana is compatible with continued living existence, and so with the conatus, but it may perhaps not.[366] This dissertation is most certainly not the place to begin such investigations, and so I will assume that what we are discussing is indeed the

[365] At its Sanskrit root, nirvana literally means nir- (out) vati (it blows).
[366] It may simply mean that the Buddha, in claiming to have become truly "enlightened" in fact, had not, or that "enlightenment" is not in fact possible, or does not achieve what it is reputed to achieve, even as this reputation is in itself something incommunicable.

cessation of the person-process. If I have misrepresented this position, then my critique works very nearly as well for present purposes, as what is principally at issue here is the question of scope to achieve the desired end, and less so the question precisely of what that desired end, or rather the end of desire may be.[367] I think that I have not entirely misrepresented the position, however, since in its core tenets of the Four Noble Truths, Buddhism refers to suffering as dependent upon the "five aggregates subject to clinging". In an essay on the subject of mortality, Jonas states:

> The basic clue is that life says "yes" to itself. By clinging to itself it declares that it values itself. But one clings only to what can be taken away. From the organism, which has being strictly on loan, it can be taken and will be unless from moment to moment reclaimed. Continued metabolism is such a reclaiming, which ever reasserts the value of Being against it lapsing into nothingness.[368]

Here Jonas, not directly discussing Buddhism, is referring to what he calls the "burden" of mortality, that in order to be at all, living beings must continually strive. It seems to me that this striving predicates the suffering that the Buddhists refer to as Dukkha, and insofar as this is so, no *living* being will ever be free of this burden. However, since it seems that this "burden" is the only way in which value for a living being obtains at all, it would appear not to be a burden or suffering *exclusively*, but simply and more importantly a condition of the existence of *any* value. So it is likely that, while I would agree with the core Buddhist tenets at one level, I would deny the inference drawn from them by the Buddhist tradition. However, while it is therefore, following Jonas, not possible to be alive and to be free of this burden[369] entirely, it is possible to be alive and no longer to be a person. This may take place in a variety of ways, for example destruction of the forebrain, with retention of the midbrain and brainstem. But such a destruction is the *destruction* and not the *resolution* of a person. Perhaps what the

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[367] In fact there are significant parallels between Spinozistic doctrine of "right-thinking" leading to adequate ideas, which in turn still the affects, and reduce suffering as the mind approaches towards a grasp of ultimate reality, and the Buddhist doctrine of the "eightfold path". But equally, there are significant divergences, with the Buddhists appearing to deny, for example, that there is any ultimate unified Being or Substance at all.

[368] Jonas H. 1996. "The Burden and Blessing of Mortality." In: Mortality and Morality: A Search for the Good after Auschwitz. Vogel L. (Ed.) Northwestern University Press, Ilinois. p.91

[369] The very concept of "burden" here maps very neatly onto the thermodynamic concept of the necessity of "work" to be done in order for living systems to continue at all.

Buddhists want is the *resolution* of the person- the coming to a point of stillness and balance, an *equilibrium* which would mean that the person no longer possesses a conatus *qua the person*, even if the conatus continues the basic processes of life in the body, and therefore passes from existence. The destruction of the forebrain example shows that this is at least conceivable. But destruction mid-process is not resolution, it is rather the problem which we all resist, as persons, it is what occurs at the end of the Procrustean bedframe: the sudden, brutal, catastrophic descent towards equilibrium which does not respect, and indeed specifically disrespects the nature D3 of the person as a *character*. Self-resolution, however, may not be so brutal a fate, the stilling of the becoming of the person-process in an *unforced* manner in this way might represent an allowance of the *completion* of the person-process, on its own terms, in accordance with and *respect* of the particular shape of its nature D3 as *character*, and without the brutal intrusion of a disvalue, a value-negation from without. But if such a person-*respecting* resolution could occur in the psychology of personhood, if the person could be stilled, by their own characterological process, to the point of ceasing to be at all, then such a being would cease to display any person-type behaviours whatever. They would simply be person-inert. I suspect, for this reason, that whatever Gautama was, post "enlightenment", he was still a *person,* for he exhibited eidetic plan-exhibiting *care* and *concern* enough to decide to propagate his message in the world, to others. Even altruistic care or concern is a person-predicated form of categorical future-directed desiring. Even if I am wrong in my analysis of the Buddhist position, the strict focus is germane. The point here is that it is generally acknowledged that, for the vast majority, nirvana, or the cessation of personhood and with it, the process of becoming, whether desirable in itself or not, *is not attainable within the scope of an ordinary lifespan.* About this I can agree. About the apparent Buddhist solution to this issue –reincarnation- I can only say that I do not, since it seems unlikely, unwarranted, unevidenced, and indeed irrelevant[370].

What we may take from this, then, is that the Buddhists agree that there is a problem, but pose a solution which is for the majority no solution at all, since in the meantime, the

[370] For what, meaningfully, can be considered to be being reincarnated? As regards the latter, it has formed an aspect of intramural debate in Buddhist philosophy, as the doctrines of the illusory nature of self, and the non-continuance of beings through time appear to undermine it.

central problem, death in actuality as a non-person-respecting and brutal intrusion, manifests. Something very similar may be said of the solutions offered by the other major religions, which do not take the view that persons should seek self-extinction through realisation of the illusion of selfhood, but, recognising the fundamental problem, seek to *compensate* for it by conjecturing or constructing fantastic future worlds in which we do continue to live, in any case, beyond our own deaths. Once again, however, in absence of any good warrant, or evidence for this, we may bracket such hopes as rather conveniently wishful, and focus instead on the problem, and the fact that whatever else may be true about these ideas, the *real* predicator of the problem- the occurrence of death, occurs just as factually along the way, as it does without such compensatory cultural construction.

Indeed, as discussed above, further problems are present in the picture of the "eternal" person, which ironically have been raised by canonical conservative theorists seeking mistakenly to criticise life-extension, when in fact they are criticising supernatural immortality. As noted above, Leon Kass, perhaps especially, though among others is guilty of this kind of error. In doing so, he also elides the perhaps more profound difficulty for person-immortal compatibility with a more localised suggestion, which attempts an end-run around the force of the mortal person problem here at hand. It is argued that far from being a problem in view of the conative, striving aspect of persons, mortality is what gives persons the drive they have.[371] Of course I deny this on two levels- first, that conation is constitutive, and therefore the lack of striving for persons will never be a problem[372], and is not, in any case, derived *at base* from *awareness* of mortality at all, and secondly that physical persons are irrevocably mortal, and so even if such theorists were right about striving, they would be wrong about the relevance of immortality to life extension.

Kass himself does not really seem to take his own version of this argument seriously, however, since he also touts as one of the *virtues* of aging, that its suffering gradually

[371] e.g. Kass LR 2003. Op. Cit. note 1
[372] For a fuller refutation of Kass' arguments on striving, see Horrobin, S. 2005, Op Cit note 203.

overpowers our will to live[373]. In this, he echoes Montaigne, who is approvingly quoted in this context in the Ageless Bodies section of the Beyond Therapy report of the PCBE:

> I notice in proportion as I sink into sickness, I naturally enter into a certain disdain for life. I find that I have much more trouble digesting this resolution when I am in health than when I have a fever. Inasmuch as I no longer cling so hard to the good things of life when I begin to lose the use and pleasure of them, I come to view death with much less frightened eyes. This makes me hope that the farther I get from life and the nearer to death, the more easily I shall accept the exchange … If we fell into such a change [decrepitude] suddenly, I don't think we could endure it. But when we are led by Nature's hand down a gentle and virtually imperceptible slope, bit by bit, one step at a time, she rolls us into this wretched state and makes us familiar with it; so that we find no shock when youth dies within us, which in essence and in truth is a harder death than the complete death of a languishing life or the death of old age; inasmuch as the leap is not so cruel from a painful life as from a sweet and flourishing life to a grievous and painful one.[374]

Kass approves and endorses this, even going so far as to state, quite shockingly in my opinion, that the absence of such debilitation, disease and discomfort would "exacerbate" the will to live, as if this were an obvious primary evil:

> In other words, even a modest prolongation of life with vigor, or even only a preservation of youthfulness with no increase in longevity, could make death less acceptable and would exacerbate the desire to keep pushing it away.[375]

But of course aging does not do this except by a process of increasing impediment, discomfort, exhaustion, and humiliation, none of which impinge in a central way on the categorically open-ended conative drive of personhood, other than to make us find life qualitatively and *contingently* more difficult and less appealing. To see that it is contingent, one must simply accept that aging interventions are *possible.* And further to deny Montaigne, in causing this suffering "Nature" is not "gentle", but cruel, and bitterly humiliating, literally *mortifying*; nor are the changes "imperceptible", but keenly felt by all who experience them. And we should not welcome these changes any more than a

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[373] Kass LR 2003. Op. Cit. note 1.
[374] Montaigne M de. From: *That to Philosophize is to Learn to Die.* Trans. Frame DM. The Complete Essays of Michel Montaigne. Stanford Univ. Press 1965; as quoted in the PCBE report Beyond Therapy, p. 188
[375] Kass LR 2003. Op. Cit. note 1.

person who seeks euthanasia in view of a terrible terminal illness welcomes, or should welcome the illness itself on the basis that it makes them more open to the idea of dying; or a person condemned to die or in the process of being murdered should *welcome* the administration of a drug which makes them *presently* feel less caring about what is happening to them. One may also notice an analogy to the benefits of being tortured to death, in view of its reducing the *contingent* willingness to live, and alleviation of the fear of death. For example consider Orwell's words on the matter, from his novel 1984:

> '…Even in the instant of death we cannot permit any deviation. In the old days the heretic walked to the stake still a heretic, proclaiming his heresy, exulting in it. Even the victim of the Russian purges could carry rebellion locked up in his skull as he walked down the passage waiting for the bullet. But we make the brain perfect before we blow it out. The command of the old despotisms was "Thou shalt not". The command of the totalitarians was "Thou shalt". Our command is "*Thou art*". No one whom we bring to this place ever stands out against us. Everyone is washed clean. Even those three miserable traitors in whose innocence you once believed — Jones, Aaronson, and Rutherford — in the end we broke them down. I took part in their interrogation myself. I saw them gradually worn down, whimpering, grovelling, weeping — and in the end it was not with pain or fear, only with penitence. By the time we had finished with them they were only the shells of men. There was nothing left in them except sorrow for what they had done, and love of Big Brother. It was touching to see how they loved him. They begged to be shot quickly, so that they could die while their minds were still clean.'[376]
>
> …
>
> It was perfectly possible that before he was shot the whole drama of his arrest and interrogation would be enacted all over again. The one certain thing was that death never came at an expected moment. The tradition — the unspoken tradition: somehow you knew it, though you never heard it said — was that they shot you from behind; always in the back of the head, without warning, as you walked down a corridor from cell to cell.
>
> One day — but 'one day' was not the right expression; just as probably it was in the middle of the night: once — he fell into a strange, blissful reverie. He was walking down the corridor, waiting for the bullet. He knew that it was coming in another moment. Everything was settled, smoothed out, reconciled. There were no more doubts, no more arguments, no more pain, no more fear. His body was healthy and strong. He walked easily, with a joy of movement and with a feeling of walking in

[376] It is interesting to note how this first passage illustrates rather well the potential for oppression, and the desirability to the oppressor, of a *substantialist* view of human nature- "*Thou art*".

> sunlight. He was not any longer in the narrow white corridors in the Ministry of Love, he was in the enormous sunlit passage, a kilometre wide, down which he had seemed to walk in the delirium induced by drugs. He was in the Golden Country, following the foot-track across the old rabbit-cropped pasture. He could feel the short springy turf under his feet and the gentle sunshine on his face. At the edge of the field were the elm trees, faintly stirring, and somewhere beyond that was the stream where the dace lay in the green pools under the willows. Suddenly he started up with a shock of horror. The sweat broke out on his backbone. He had heard himself cry aloud…[377]

As beautifully, horribly evident in this description, these scenarios are repugnant because such a person does *not desire to die.* If they could, they would live. They *desire to live*. But they *know that* they will die, and in the case of the euthanasia candidate or those extremely decrepit through age, or being viciously tortured, *know that* nothing but suffering intervenes. Death becomes a feature of a "blissful reverie" on account of the suffering that precedes it. The cases of the people condemned to die or otherwise being actively killed but issued with a palliative are both analogous to these other cases, but also are very germane in the case wherein aging interventions become a viable reality, since prevention of access to them would be analogous to pro-active legislation denying terminally ill persons available and effective treatments. In such cases palliative care for the elderly would attain a truly macabre status and quality. If no act/omission distinction is accepted,[378] then the State that *enforces* death through aging in fact becomes a brutal and murderous Procrustes. Such a situation would be one of the grossest paternalism, one which enforces a uniform life frame of arbitrary span, and in so enforcing, must become an executioner by omission, if not commission as well, *for what, can one suppose, would be the sanctions for the breach of any statute established against life extension*?

In all cases, the diminishing of *contingent* desire for personal continuance, based upon qualitative considerations of life-experience in no way means that a person must have a diminished *categoric* drive of *personhood* towards the future, nor that *ceteris paribus*, so, in absence of the sickness unto death, does it mean that life extension would not, for them and in view of this, be a clear, categoric good!

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[377] Orwell G. 1949. 1984. Secker and Warburg, London. Part III, II and IV.

[378] The literature is too extensive to reference here, but suffice to say that I generally accept the arguments for a lack of such a distinction, in relevantly *similar* cases.

It is the *categoric* desire to live which itself makes the suffering towards death *most* intolerable, but it is intolerable only to the extent that the life's continuation itself is valuable.

One may accept that the reduction of caring about life's continuance may be a good in the face of our inevitable ultimate mortality, without accepting the purported good of and so without embracing the means of enforced decrepitude, which forces by qualitative discomfort the wholly contingent reduction of desire for life's actual continuance *in that particular set of circumstances*. In this way, a true self-resolution of the person process, which in an *unforced,* gentle, gradual, nature as character D3 person-respecting manner - *and without the requirement for qualitative horrors*- reduces the conative drive, perhaps to nothing, prior to death, might be seen as a good. But if it is a good, it is a good which, as the Buddhists observe, rarely if ever occurs within the scope of any ordinary lifespan.

3.4 The Makropulos objection- the "fixity" of character and the misunderstanding of boredom

Various modern commentators have taken up the suggestion, initiated in the discourse by Williams, but using the example of Karel Capek's opera *The Makropulos Secret,* that we should not seek to extend life because it will end in boredom. In this work, Elina Makropulos is the daughter of a man who has formulated the elixir of life. She is, at 342, somewhat less than three times older than the present maximum known endogenous span of 120 years or so. Consider the following from Capek (the eponymous Elina Makropulos is speaking of her own radically extended life):

> Boredom. No, it isn't even boredom. (…) you have no name for it. One cannot stand it. For 100, 130 years, one can go on. But then (…) one's soul dies. (…) For you, everything has value because for the few years that you are here, you don't have time to live enough. (…) no one can love for 300 years – it cannot last. And then everything tires one. It tires to be good, it tires to be bad. The whole earth tires one. And then you find out there is nothing at all: no sin, no pain, no earth, nothing.[379]

It is interesting to notice that Capek himself is not sure what he is speaking about, in this passage: "No, it isn't even boredom." He is of course right, though, it is not boredom. Simply put, boredom presupposes affect, and conation. We are not bored *simpliciter*. Boredom without reference *to something we would rather be doing* is meaningless. When people are bored, they speak of boredom *in relation to* having nothing to do (or else an inability to do it), and having nothing to do is not, in itself, a problem, *unless one is feeling driven to do something!* Capek, and his followers, illegitimately conflate, or rather perhaps simply confuse two quite separate ideas. The person who is bored is indeed still a person, still driven, and is one who feels boredom in view of feeling aggrieved at not doing something! This misuse of the idea of boredom is especially inappropriate in context of the other idea that I believe these commentators have in mind, without it being sufficiently explicit, perhaps partly because of a lack of explicit analysis of persons as

[379] Capek K. 2000 (f.p. 1922). "The Makropulos Case" In: Plays: Vol 1. Methuen World Classics.

processes: that, after a truly long period, the conative aspect of personhood may self-resolve, achieve a kind of equilibrium status, wherein, at the level of the person, there is little or no further activity, and therefore little or no remaining person. But, if I am right about conation, then simply put, if there is no conation, then there will indeed be no affect and no desire, but this will of course *not be a problem* for the person who then remains, a la Elina Makropulos, since without conation there is *no person whatever*! In the Makropulos case, it is clear from her various wailings (after all it is a *drama*) that Elina very much remains a personality with strong affects, opinions, and concerns. A person wholly without conative drive, wholly without affect, would simply not be motivated to the complaints that Elina makes in this work of fiction. It is a wholly inappropriate and mistaken concept to speak of having *no affect*, and more pointedly, *no conation* as being *bad* in some way, or negative, *qua the affect of the person in question*. Further, of course, it is important to notice that Capek here speaks of the failure of *valuation.* Life's continuance has no further value for Elina, but the basis for this value is seen very much in the Kassian terms of being supplied by the *limitation* of lifespan. We have already seen the reasons why this is neither valid nor sound. The bootstrapping that is characteristic of the wholly autonomously predicated and sustained idea of valuation is not noticed, and a false picture of the fundamental origin and driver of value is accepted, without argument or question.

As a general observation, it should once again be noted that such arguments from "boredom" are in any case wholly conjectural, or rather derived from a wholly unactualised armchair thought-experiment, and so of very dubious pedigree as a serious concern that must hinder our present action. If they are derived from any observed reality, (and I know of none which actually bothers to cite examples or reference studies of, let alone quote, the aged) it must be the reality of some of the very aged. But the boredom of the aged is to a large degree contingent, surely, upon their inability to do the things they would like to do, due to the disabilities of aging, rather than the specific number of years they happen to have been around. If the boredom comes from a fixity of mind, rather than physical or social circumstances, then it is possible, indeed highly likely that this fixity is itself one of the *pathologies of biological, not chronological aging*, and as such would be

a *target* for aging intervention. For even in the very aged, and despite physical disabilities, this boredom appears contingent both on the circumstances of the person, say, socially, and of themselves as *characters*. The oldest known person ever to have lived, Jeanne Calment, who lived beyond 122 years, was sprightly, engaged, lively, funny and interested until almost the last hours of her life. Having been confined, after breaking her hip, to a wheelchair from the age of 115, at some point after her 117th birthday she is recorded to have said, of boredom: "I'm reliving the good times of my life, and I never bore myself".[380] Shortly after her 119th birthday she is recorded to have remarked, in answer to the question "What *used* to please you?": "Everything interests me, everything interests me."[381] Notice the clearly deliberate *present continuous* tense. It is well documented that she clearly *enjoyed being famous*, which fame had only *begun* after her 113th birthday, when it was noted, during celebrations of the centenary of Vincent Van Gogh's stay in Arles, her home town, that she was actually a contemporary of that event! Of her fame, she would later state: "I've waited long enough to be famous, so I intend to make the most of it as long as possible."[382] The researchers who later (after the age of 117) interviewed and examined her over a period of several years state in a co-authored work that:

> A purely factual, systematic listing of her memories was at once quickly overturned by Jeanne Calment herself. She knew, little by little, how to captivate us with her personality even more than with her feats of memory, and a much stronger relationship progressively developed. She took herself – and us – for a ride. Her *joie de vivre*, her mischievousness, her ease of exchange were ever-widening pathways. In front of us was a woman who managed to forget her age, which was as astonishing a feat as her age was enormous. Humour filled her speech and bursts of laughter were frequent.[383] … Jeanne Calment's memory turned out to be exceptional; if her memory were an attic, she easily had the largest one in the world, and perhaps the fullest. Imagine describing precisely the color of a dress you had when you were seven, naming your music teacher, or explaining what was on the menu during a family gathering – a century ago! We realize that the articles and press reports after each of these anniversaries [her birthdays] leave one hungry for more. Fortunately, each interview blossomed with

[380] Allard M. Lebre V. Robine J-M. 1998. Jeanne Calment: From Van Gogh's time to ours. Coupland B. (trans.) W.H. Freeman and Company, New York, NY. p.17
[381] ibid p.119
[382] ibid p. 133
[383] ibid p. 8

> witticisms and scathing lines hurled at journalists who came to meet her; often Madame Calment herself dragged her interrogators out of the rut of stereotyping.[384]

This is patently not an account of the moribund, bored, fixed, Struldbrug incapable of novelty, optimism, or the forming of new and engaging relationships because of a fixed character and overfull memory that the pessimists of the benefits of great longevity would have us believe is inevitable. Given the proportion of the current population to historical populations, and the fact of modern medicine, it is likely that Jeanne Calment is the longest-lived human being of all time. Therefore the most striking actual case that we have, by far the oldest human being ever known to have existed lies in straight defiance of the conjectural cases, stereotypes of nothing real, but worse, only *projections* of stereotypes, since they cannot be based in experience or evidence, laid out to frighten us from the armchairs of the pessimists.

One should, after all, remember the possibly perspectival fact that years for the aged seem far shorter than they do for the young. This, along with the greater capacity for self-inherence in terms of rational functioning and cognition,[385] helps to explain why the *young*, not the old, are indeed the ones who are most rapidly and most easily *bored*. While the young have few experiences to relive, the old are repleat with these same, and may turn them over and over at leisure, considering and re-considering them and their implications. Mme. Calment clearly *enjoyed* doing this. And why should she not? Any even apparently simple situation is in fact deeply complex, and may be analysed almost endlessly, as the tens of thousands of doctoral theses on the plays of Shakespeare will attest! If this were not so, in a more ordinary, less academic way, we should not place sculptures in our houses and gardens, for if the possibilities of their static, simple lines were exhausted at a few glances, we should be *bored* of them forthwith. Would anyone, other than the unimaginative, and uncultured, assert that Michaelangelo's David was

[384] ibid p. 13
[385] That comes with increased knowledge and cognitive function of the kind that is picked out by *phronesis*, discounting the effects of the degenerations of aging pathologies, since these would clearly be among the targets of aging interventions.

simply *boring*? If this is not the case, however great the master is in his or her approaches toward a *reflection* of life, how much less so the infinitely varied, phantasmagoric reality we all actually inhabit? Why should an *active* mind rich with experience become bored? Is it not that lazy and inexperienced, impoverished minds are bored more easily than experienced and rich ones? Even one with a fairly fixed character should surely find that a thousand years is but little time to *evaluate*, let alone *experience*, the whole world, the whole *universe* of possible experience and knowledge! At least in this mode, I find myself agreeing with John Harris that "only the terminally boring are in danger of being terminally bored".[386] At base, then, there seems in this idea to be a further confusion between or conflation of the simple fact of chronological aging, and the symptoms (for some, but clearly not all for the major duration of the "third age"- though of course for all by the end) of *biological* aging, which of course themselves would be targets of any life-extending therapy! It hardly seems a good argument, though is not untypical of critics of aging intervention, to urge the horrors experienced by the biologically aged as an argument *against* aging intervention.

The concern about the fixity of character is set up as a dilemma by Williams, with the kind of loss of identity through transformation worry outlined in 3.1 above on one hand, and the problem of fixity on the other. We have already dealt with the Scylla of loss of identity due to excessive flexibility above. The Charybdis of inflexibility has also partially been dealt with above, but to facilitate a more focussed critique it will be useful to lay it out in terms of its basic structure as follows:

CP1: Persons are characterologically inflexible, and must be so to preserve their identity.

CP2: Based on CP1, radical life extension for persons will inevitably result in terrible boredom, or if this definition is resisted, at least lack of

[386] Harris J. 2004. Op. Cit. note 101.

possibilities for continuing engagement with the world, which must mean lack of motivation and of affect.

CC1: A radically life-extended person will be bored, or otherwise exhausted to the point of having no conation or affect whatsoever.

The basic argument is supplemented by an implicit premise:

ICP: Having no motivation or affect is *positively bad* for persons.

Leading to the general conclusion:

CC2: Radical life extension is not a desirable goal.

Based on the kinds of observations given above, premise one is very dubious indeed, since it appears to presuppose that persons have a *uniform* "natural" span within which they can have interests, and outside which they will, by some *constitutive* element, *largely unexplained in the theory* and simply assumed at CP1, be *inevitably* bored, regardless of whether they are in full possession of their faculties and abilities, or not. This seems to ignore the mind-boggling vastness of what there is to know, to experience, and to do, and of course, though *ex hypothesi,* ignores the constitutive and inalienable open-endedness and forward-directedness of persons as classes of being. Accepting for a moment the idea that characters are fixed in some basic way, there is nothing per se about the simple inflexibility of a character that will necessitate that they will not be able to continue to engage in a rewarding and exciting manner with the world in general. A chess player, for example, even of a fixed *character*, may continue to enjoy playing chess more or less indefinitely, even though it is itself a game of very limited *character* (in that, for example, it can never be checkers), on account of its potential for extremely complex variation of pattern. If this is true of chess, how much more so of the infinitely more complex real world? Mme Calment nicely expresses this in her statement concerning her running over her own memories, and lack of boredom in so doing. But there are other

examples, such as that of a man who has been extensively studied and is known as "EP" in the literature to protect his identity, who is brain damaged and is consequently incapable of forming lasting "new" memories, such that he has a personality and character essentially fixed at the period prior to 1960.[387] One of the striking things about this man is that, despite his intrinsic inability to engage fully with the modern world, he is apparently calm, and happy, and enjoys engaging with other people. He possesses a personality, and is indubitably a *person*, but the stream of his personhood, albeit conatively driven, simply does not connect with, and encompass fundamentally *new* objects of knowledge, memory, and experience. His happiness is surely, however, a *good* for himself, and we may not, surely, kill him with moral impunity, since his life, and its continuance remains valuable, despite this lack of engagement in entirely *new* structural relationships. This value is likely akin to the kind of value that a chess player derives from playing iterations of a game whose rules do not change, have not changed for hundreds of years, and will never change by definition of the game itself. This is not to say that such a person is incapable of development, any more than playing endless iterations of the game of chess will not lead both to development of the skill and character (in terms of being a chess-player) of the player *qua* chess, but also in other ways, perhaps of the kind that draws Zen practitioners towards repeated iterations of very fixed forms of activity, such as archery.

In view of these kinds of considerations, CP1 appears wholly unwarranted, and therefore rather gratuitous in nature, founded upon a false assumption. But worse, it appears to miss the mark even if it is warranted at some level, for it does not bear the consequences that it is considered necessarily to do. In this way, it fails to connect to CP2, and the argument is both unsound and invalid.

Turning to premise CP2, as argued above, if referring to actual boredom it is self-contradictory, and misunderstands what boredom is in the first place. Beyond this, even if speaking not of boredom, but simply of lack of motivation, or affect, it likewise fails, since if the motivational aspects of a person have self-resolved, or failed entirely, there

[387] Foer J. 2007. Op. Cit. note 326.

simply is no person left to bewail their fate. This latter observation means that ICP is unsound.

The Charybdis argument is therefore either blocked by the unsoundess of the premises and/or the invalidation of the connection between CP1 and CP2, or if even these critiques are not accepted, then because implicit premise ICP is denied, the argument fails to reach its ultimate conclusion at CC2 in any case.

What, then, can be the merit of such an argument? It seems unlikely, after all, that such intellects as Williams were *wholly* mistaken. So what is the true character of this observation, and may its corrected construction in fact argue *against* radical life extension, or could it perhaps amount to an argument *for* it, instead?

3.5 Procrustes and the imperative for scope: conative process, instrumental value, eudaimonia, nirvana, and true quiescence.

Suppose, for a moment, that the solution to the muddled story of Elina Makropulos is that Carel Capek, and his followers, have not *fully* grasped the role of conation in the *process* of personhood and the conative basis for the valuation of life's continuance, even if secondarily endorsed at the level of the person. Suppose they have thought (incorrectly) of persons as fixed substances, and mistaken the functionally or circumstantially mediated boredom of the biologically aged, for the extinction of personhood that might come as a result of the true end of striving, conation, and therefore affect, and indeed, *ex hypothesi* reasoned cognition, perhaps as a natural consequence of person-processes coming to a natural (character D3) self-resolution in deep time. I suggest, then, that it may be that what Capek really wished to describe was not boredom, but something akin to nirvana, or true personal quiescence. Such a nirvana would not be in the false, commonly mistaken conception of some kind of bliss, but rather would be true nirvana, being the extinction by character self-resolution within the scope of being alive, of categoric desire at the level of the person *and therefore* personhood, entire. Seen in this way, Capek simply did not have a full or clear conception of what he was attempting to express, and Elina's wailings and lamentings are therefore an absurd form of malingering, since by them she demonstrates entirely conclusively that she is most certainly not what she claims: absolutely empty.

But should complete emptiness, should the end of conation, should the cessation of personhood in an unhindered, processual manner of natural character D3 self-resolution, if such processes can indeed work themselves out to a standstill, should such true quiescence be considered *negative*? Is this what makes death bad? Is the self-extinction by self-resolution of the person, in such a manner of cessation *prior to biological death* bad of necessity? The Buddhists, and I, would certainly suggest that it is not.

But, putting that aside for a moment, if it is not, then why not suppose that we should not just leave well alone, and allow the current situation on lifespan to obtain? Remembering Procrustes, and considering the (perhaps) wisdom of the Buddhist insight concerning both the possibility of nirvana's attainment in one lifespan, and the high unlikelihood of this, then death for the vast majority surely constitutes, whatever their circumstances of health, a shocking and brutal foreshortening of the self-defining *structure* or *character* (and hence nature D3 as discussed above) of the process of their persons.

To allow some perspective upon what I here suggest, take the example of Aristotelian virtue ethics. Virtue ethics is processual in nature, and is (whatever is claimed by Aristotle about substantial personhood) in fact person-process regarding, since the person undergoes a process of gradual self-transformation towards the "good life". From arête, through phronesis, towards Eudaimonia, the process continues through life. But since there are striking variations in the raw material of original or early character (as identified with arête) and the opportunities for self-development afforded by life- and the self-experiences of the person-processes (as identified with the accrual of practical wisdom in the process of phronesis), Eudaimonia is unobtainable by most, indeed, by any but the happy few. *But what if there were greater scope for phronesis*? Surely it seems reasonable to suppose that character development requires, in this picture, some *significant* and *non-uniform*-across-all-persons but rather person-predicated period of *extension in time*, and that it is indeed true, that for many or most (and I would suggest likely all) the present extension will be insufficient for the purpose. The one-size-fits-all approach to appropriate lifespan just seems to mistake or worse, ignore, what *various* structures person-processes are, and how they generate their own purposes and structures, or character-natures D3.

One may of course here add the very considerable weight of instrumental values of the ordinary life-plan kind into the mix. For who in life is so fortunate to fulfil half the dreams they have had? And it should be remembered that all such are *ex hypothesi* generated semi-spontaneously out of the conative drive of the person-process that we all are, such that so long as we are persons, we shall continue having new desires, new

dreams, of one form or another. This latter need not mean that self-resolution is *impossible*, only that it is not, by a long chalk, *easy*.

For a person-process that has achieved self-resolution, and come to a processual end, for a true Makropulos, there would be no passion, no fear, no affect, no boredom, no disvalue, no wailing.[388] There would simply be no person. Instead of continuing the process of becoming, the person would have unfolded their whole character, and would fully have *become*. Life extension would have no value, and death no horror or disvalue, whatever. True quiescence of the person-process would have been achieved, and the structure of the person-process whole and complete. Such an outcome, if plausible at all, would appear to obviate the difficulty posed by biological aging (or anything else!) bringing death within a rigid frame, to person-processes.

But for a *person*, for one who still feels and is constituted by the powerful, primal conative drive, pervasive as gravity, and progenitor, sustainer, and motivator of all desires, rational plans, goals and values; in the ordinary way, *their* process unfolds the limitlessly variable body of their personal life upon the uniformly short iron frame of ancient and irrelevant biological circumstance, continuously towards the relentless, purposeless Procrustean cleaver of decrepitude and death at its end.

Seen in this light, a Makropulos story told in full consistency would look, I suggest, more like an argument for life *extension*, than one for false quiescence in the face of, or brutal compliance with, the biohistorical dictates of Procrustes[389].

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[388] And also one might note, as one might mischievously suggest that Capek noted also: no action to the play, *no personal development*, and therefore, no opera!

[389] Indeed the same may be true of quite a number of other purportedly anti-life-extension arguments, construed in light of personhood as conative process. Ones that certainly come to mind are those purportedly based upon the structural integrity of the "natural" human lifespan, which essentially allows a non-existent purposeful Procrustes to dictate what the person clearly would prefer to. One may well recast such arguments in a person-internalist light, respecting the unforeshortened structure of the whole person-process rather than a "nature" worshipping one, in which false teleologies are ascribed to the evolution-calibrated timing of human aging. Examples of such an argument is given in: Callahan, D., 1997. Living to 100: good or bad? *The Journal of Applied Gerontology* 16: 267-269.; Kass 2003. Op. Cit. note 1.; President's Council for Bioethics (PCBE) 2003. "Ageless Bodies." Chapter four of the report: Beyond Therapy: Biotechnology and the Pursuit of Happiness. Available at: http://www.bioethics.gov/reports/beyondtherapy/chapter4.html [Accessed January 2008]

Conclusion

Biogenerontological research has come of age. The mechanisms of aging are no longer wholly mysterious as they once were, and the capacity for significant interventions in human aging, leading to significant or radical extensions of personal lifespan is at least realistically conceivable, and at most, imminent. This mandates a reanalysis of the bioethical evaluation of the value of life, and the value of life extension, to persons. I have sought to demonstrate that this re-evaluation requires a reconsideration of the analysis of the nature of Nature in general, and of persons in greatest particular. The reanalysis that I have performed modifies the classic conception of persons as self-conscious, autonomous, rational valuing agents, to account for the fact that persons so conceived must necessarily be conceived as processes, a necessary element of whose primary constitution is the fundamental motivating driver, the conative aspect of mind. The consequence of this analysis for the concept of the value of life, is that the value of life necessarily must be considered to be the value of life's continuance, and this value is a necessary constituent of the concept of persons as conatively-driven valuing agents. In this wise, the value of life's continuance is an inalienable value for persons. A major consequence of this analysis is that it supplies a corrective element to the structure of the liberal conception of the value of life such that this latter, conceived as the value of life's continuance, is far more stable than has been offered hitherto by the subjectivist branches of this conception, since it is not apt to cancellation even by reflexive subjective re-evaluation. As such it offers a novel, and more comprehensively grounded, approach to the liberal view that in turn may obviate some of the major bases of objection which have classically motivated, justified, or been posited by the holders of conservative views of personhood. In this way, the view offered may afford some scope for reconciliation across the liberal-conservative divide in bioethics, as concerns what has traditionally been termed the value of life.[390] Additionally, this analysis has significant implications for our conception of the morality of suicide, as well as the more general conceptions of personal identity, the disvalue of death, the nature of the good of living, and the nature of the good

[390] See Holland S. 2003. Op. Cit. note 114.

life as a *complete* nature-as-character D3. Further, it should represent and generate significant underpinning for arguments against ageism. In the wider area of metaethics, this analysis, especially in its extended version including the underpinning in the biodynamics of living systems, would appear to have significant implications for our understanding of the nature of value in general, and would appear to afford a route to the naturalisation of valuation "all the way down" to the level of the border between non-living and living dynamic systems. Even setting aside this wider thesis, grounded in systems dynamics, the core thesis itself provides grounds for a re-analysis of certain metaethical systems, in particular non-cognitivist and constructionist conceptions of the nature of valuation in ethics.

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